SCHOOL AND SOCIETY

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THE FUNCTION OF A DEPARTMENT OF EDUCATIONAL INVESTIGATION AND MEASUREMENT IN A CITY SCHOOL SYSTEM[1]

PURPOSE OF EDUCATIONAL MEASUREMENT

THE ultimate purpose of all educational investigation and measurement in a city school system should be to increase the effectiveness of the instruction which each child is to receive. Every educational agency—*i. e.*, every supervisor, every special teacher, every regular teacher, every school building, all text-books, all educational equipment of whatever kind, in fact everything within the public-school system—is fundamentally for the purpose of providing the instruction which the child needs to make him individually and socially efficient. Any investigation carried on by a research department in a city school system of any of the above instrumentalities should, therefore, be for the purpose of determining how effectively it is discharging its proper function of serving the children.

Although at first thought this definition of the purpose of a research department may seem to limit unduly its field of work, a closer analysis will show that this is not so. This definition concedes to the department as its proper function the investigation of any educational problem which the school authorities have to solve. The department may investigate supervision, because supervision is or should be for the purpose of improving the instruction given. It may investigate programmaking in the high schools, because it requires a scientific method of programmaking to insure to each pupil the instruction which the course of study indicates he should have the opportunity to obtain. Unless the daily program of the high school is properly made, a pupil may find such unavoidable conflicts in his individual program as seriously to interfere with his education. The department may investigate the work done by principals of schools to determine to what extent they are helping their weak teachers, or adapting the course of study to the types of children in their respective schools. It may investigate the methods of appointing teachers or the source of supply, to determine whether the city is securing those teachers best prepared for their work. It may investigate the delivery of educational supplies, because school work is often seriously interfered with if text-books and other educational material are late in arriving. It may investigate any financial problems because efficient work depends on adequate financial support.

In addition to these topics, whose relation to the problem of instruction is direct and obvious, the department should also consider it one of its functions to carry on investigations of some of those problems which are less direct. The department may properly test children by the Binet-Simon test, for example, to determine their general intelligence as a basis of proper classification for instruction purposes. It may also be expected to test children to define psychological stages of development in order to determine the most appropriate

[1] Read before Section L, American Association for the Advancement of Science, Philadelphia, December 30, 31, 1914.

time for teaching different topics or subjects. In short, from the above interpretation, it is clear that every phase of the public-school system may properly be the subject of an investigation and appraisal under this definition of the purpose of a department of educational investigation and measurement.

It is important that the department keep this purpose steadfastly before it in the prosecution of its work. It should recognize the fact that not all those in the educational profession are yet agreed that educational measurement and educational research in the public-school system are going to make any contributions toward the solution of the important educational problems which now confront the profession. Above all, the department must merit the respect of its friends, and also should carry on its work in such a way as to make it difficult for the "doubting Thomases" to retard the legitimate work of the department by trivial and inconsequential criticism. Like all other educational agencies within the public-school system, the department of educational investigation and measurement must justify its existence and measure its usefulness by the effect which it has on the education of the children for whom the schools are provided. Keeping these considerations before it, the department may confidently expect to steer clear of the Scylla of non-essential statistical compilations, on the one hand, and the Charybdis of mere theoretical educational speculation on the other.

Since departments of educational research in public-school systems are of such recent origin, their functions are as yet largely undefined. Each department in the several cities has undertaken to assist in the solution of those educational problems which have been most pressing in that city. As yet, there is little or no printed matter which describes the functions of each, or which sets forth what each is trying to accomplish, or which indicates the results which each is achieving. Therefore, it has seemed to me best not to try to speak for these departments as a group. Rather, in this paper, I shall confine myself to a brief description of the lines of work which the department in Boston has begun, and to a summary statement of the underlying principles which the department has followed in carrying on its work.

SCOPE OF THE WORK UNDERTAKEN IN BOSTON

From the above definition of the purpose of educational investigation and measurement, it could be correctly assumed that in the beginning of its work the department in Boston would devote a large part of its time to the problems connected directly with instruction. Boston has undertaken three lines of work in the elementary schools, each of a distinctive kind, but each only part of the general movement to increase the effectiveness of instruction. These are:

1. A clear definition in the course of study of the minimum essentials in each subject and grade for the purpose of defining what should be emphasized in teaching, and thereby also indicating incidentally in what phases of each subject it is most worth while to test children.
2. The establishment of objective standards of achievement on a fact basis as specific ends to be attained by both pupils and teachers.
3. Scientific experimentation in the use of subject-matter or of methods of instruction as a means of improving the work of the schools.

DEFINITION OF MINIMUM ESSENTIALS

To define the minimum essentials in each subject and grade, a complete revision of

the course of study in the elementary schools has been undertaken. In scope, this revision covers each grade and most of the subjects within each grade. In order to draw on the experience of teachers in using the course of study, the cooperative method of procedure has been adopted. Each of the seventy elementary school districts is represented in the conferences on course of study by at least four teachers. In all, 359 teachers are now working on course-of-study committees. These teacher representatives have met in one general conference, in one special conference for each grade, and in one special conference according to the various subjects of study. Following these conferences, the special committees are proceeding to revise the course of study in the light of present-day demands and of their experience in using the course.

As a means of defining more definitely the scope of the problem of spelling and also for the purpose of illustrating for teachers a method of revising the course of study in each subject in the elementary schools, an investigation of spelling was begun last April. The particular point that it seemed desirable to emphasize was that the material for a course of study in any subject should be selected on the basis of individual need as determined by social demands. A child needs to know how to spell because he needs to write. While it might be possible to teach a child to spell the fifteen or twenty thousand words in our older spelling books, such teaching would be largely a waste of time, because most children use only a small number of those words in their writing. The material for spelling should be drawn largely from the words which the children use in their writing, leaving out of consideration largely or wholly their reading and their speaking vocabularies.

To start this investigation, the teacher representatives in each elementary district were asked to furnish a list containing from 25 to 40 words which were most commonly misspelled by pupils in their written work. From these lists, this department selected a minimum list of alleged difficult words which pupils in each grade used in their writing and which, therefore, they ought to know how to spell. A supplementary list was also prepared, which contains review words and also additional words which most children should know how to spell. The total number of words in both of these lists as they now stand is 2,525. To secure these words from the various teachers required the tabulation of over 15,000 words and the handling of returns from 295 teachers. A bulletin has been published covering the investigation and containing the lists of words to be emphasized in the instruction of each grade. Ultimately, when these lists are perfected in accordance with the plan proposed in the bulletin, they may properly form the basis of all spelling instruction in the schools.

In rewriting the course, teachers have been asked to define the specific purpose of each subject, to eliminate obsolete topics, to add desirable new topics, to define minimum essentials in each subject, to suggest minor or supplementary topics, and to indicate methods of teaching difficult topics. The result of defining the purpose and indicating the irreducible minimum essentials of each subject will be an important step toward defining not only what should be emphasized in teaching, but also in what phases of each subject it is most worth while to set up objective standards of achievement.

ESTABLISHING OBJECTIVE STANDARDS OF ACHIEVEMENT

A standard of achievement is the aim or goal toward which the teacher and the pupil

work. *Without* a well-defined standard of achievement, a teacher's efforts are likely to be scattered and much of her (or his) energy misspent. *With* such a standard, the teacher's problem in teaching and the pupil's problem in learning are more definitely defined, and the chances of better accomplishments are materially increased.

Suppose one wishes to find out how effective the teaching of spelling is in the sixth grade. Before one can measure its effectiveness, he must define in specific terms just what ability to spell a sixth grade pupil should possess. This means that he must determine how many words and how difficult words a sixth-grade child ought to know how to spell. This is fixing the standard of achievement in this subject in the sixth grade. To teach the children to spell the words selected for sixth-grade pupils becomes the object of attainment, or the standard of achievement. After this standard of achievement has been established it becomes a comparatively easy matter to find out how effective the spelling instruction has been.

Valid objective standards of achievement for the various subjects and grades can not be effectively established on the basis of what any one may think children ought to be able to do. Such standards must be established on the rock bottom basis of what children actually can do. The only means of finding out what children can do is to test them. After the minimum essentials in the course of study have been defined, therefore, it remains to test the children to find out the degree of success which they have achieved. In Boston, standards are being established on the basis of the median, *i. e.*, on what at least 50 per cent. of the children can do.

It is unnecessary to point out that there are few such standards of achievement at the present time. Our courses of study are bare outlines of work to be taught; our standard of achievement has largely been expressed in terms of a passing grade—say 60 per cent. Whether that 60 per cent. means that the child has mastered 60 per cent. of the prescribed course of study, or whether it means his relative position in the class, or whether it means one of a number of other things, might be difficult for any one of us to explain.

The exact measurement of educational results is only in its infancy. Scales of measurement are indispensable essentials in the scientific measurement of the work which pupils do. As there are units of length in measuring things linear, and units of surface in measuring planes, so must there be units of measure in evaluating educational results. Thorndike and Ayres have provided such scales for measuring handwriting; Hillegas and Ballou have prepared scales for measuring English compositions, and Buckingham has prepared a scale for spelling. These men have undertaken to create units of measure in these various subjects so that comparable results can be obtained from testing work in various cities. The most conspicuous examples of the scientific measurement of educational results and the measures which have been applied to the largest number of children are the Courtis Standard Tests in addition, subtraction, multiplication and division.

The scientific work of defining objective standards of achievement on the basis of what children can do is in different stages of progress in Boston. In most cases, it is only well begun. What is being done in the various subjects and what is planned for in the immediate future will be described.

ARITHMETIC

Arithmetic is the only subject in which objective standards have been defined as a

result of the scientific testing of children. Two years ago, the Courtis Standard Tests were given by Mr. Courtis to over 20,000 children in Boston. Last year these tests were given in January and again in April in 35 elementary districts covering 20,000 children in grades from four to eight inclusive. This year similar tests were given early in October to about 35,000 children in 53 districts, leaving only 17 elementary districts as yet untested. Next April, the same tests will be given to all children in the Boston public schools in grades four to eight.

From the testing of last April, definite standards of achievement in the four fundamentals have been established for each grade from the fourth to the eighth inclusive, based on what 50 per cent. of the pupils of the city in any grade actually did. For example, it was found that 50 per cent. of all children tested in the eighth grade attempted at least 12 problems in addition (Courtis Standard Tests, Series B, Form 3) and got at least 11 of them right. Hence, the objective standard of achievement fixed for the eighth grade in addition is 12 problems attempted and 11 correctly solved in eight minutes. The complete standards by grades are as follows:

June Standards for Individual Pupils

Grades	Addition, 8 Minutes		Subtraction, 4 Minutes		Multiplication, 6 Minutes		Division, 8 Minutes	
	Attempts	Rights	Attempts	Rights	Attempts	Rights	Attempts	Rights
IV	8	6	8	6	6	4	4	2
V	9	7	9	7	7	5	6	4
VI	10	8	10	8	9	7	8	6
VII	11	9	11	9	10	8	10	8
VIII ...	12	11	12	11	11	10	12	11

These standards are stated in terms of the number of problems attempted and the number of problems correctly solved.

Some may feel that the matter of accuracy is lost sight of, or at least is minimized, in such a statement of a standard. It should be remembered, however, that accuracy can only be measured by taking into account the amount of inaccuracy; hence, it is an indispensable essential that the number of problems attempted be considered. The ideal of accuracy is, and should continue to be, absolute perfection; the standard of attainment will probably have to be a little below that—at least under present conditions. Ultimately, we hope to be able to establish a standard for Boston in which the present amount of inaccuracy in the several grades is somewhat reduced.

Besides testing the ability of children in the four fundamentals, a committee on standards in arithmetic, made up of masters of schools and teachers, is working on some tests in fractions which will be given before the close of the present school year.

SPELLING

As has been pointed out, Boston has already taken the first step in its study of the problem of spelling instruction by listing for special study the most difficult words that occur in the writing vocabularies of children. This listing was based merely on the individual judgments of large numbers of teachers. Tests will be given toward the close of the present school year to determine what words the children misspell most often as a means of classifying them according to their relative difficulty, and also as one means of determining in what grades various words ought to be taught.

GEOGRAPHY

Two tests have been prepared in geography which have been given to 200 children in the eighth grade in four different

schools, merely to experiment with the tests. If the tests seem adequate for our present purpose, they will be given to about 2,000 children at once. It is not the purpose of this testing to develop standards as yet, but rather to find out the weak and strong points of the present instruction as a basis for future improvement. Later, when as much time has been given geography testing as has been devoted to arithmetic, for example, it may be that some tangible standards can be developed.

ENGLISH

Various phases of the subject of English have received systematic attention for some time in Boston. A committee on standards in English had been working on the problem of establishing objective standards of achievement for graduation from the elementary school sometime previous to the establishment of this department last April. The committee was made up of representative teachers in elementary and high schools, and included the assistant superintendent, who has charge of English. This committee published three bulletins. The first bulletin contains a model form of a friendly letter together with directions for writing the same and for addressing the envelope. The second bulletin contains a model form of a business letter, a model form for a bill and a receipt for the same. The third bulletin contains "Tentative Minimum Requirements in English for Graduation from an Elementary School." The Board of Superintendents authorized the publication and use of these, as authoritative standards of achievement. The standards without the explanatory matter are as follows:

1. To copy twelve lines of simple prose or poetry, and a bill of at least seven items.

2. To take down from dictation a passage of simple prose.

3. To write from simple directions a friendly letter or an application for a position.

4. To write within a half hour a simple, original composition of not less than one page of letter paper, with every sentence grammatically complete. The pupil may make revisions, including interlinear corrections, but must not rewrite.

5. To recognize the parts of speech in their common uses; to explain the construction of words and phrases in a simple sentence containing not more than one phrase modifier in the subject and one phrase modifier in the predicate; to have a practical understanding of the uses to which the dependent clause of a complex sentence can be put—whether it be to serve as noun, adjective or adverb; to know the principal parts of regular verbs and of the common irregular verbs, and their tense forms through the indicative mood.

6. To read at sight with readiness and good expression simple prose as difficult as "Little Men" or "Hans Brinker."

7. To quote either orally or in writing fifty lines, not necessarily consecutive, of classic prose or poetry.

8. To stand before the class and talk clearly on some subject of personal, school or public interest.

Obviously, these "minimum requirements in English" represent what the committee on standards thought an elementary school graduate ought to know or to be able to do. This committee is continuing its work under the direction of the department and our joint work is to measure educational results to see to what extent children can attain these standards which have been empirically set up. These standards will be put on a fact basis as fast as tests can be prepared and given.

For this purpose, two tests were recently given to over 4,000 first-year high school

pupils in November. Although these tests were given in the high schools, the pupils were, for our purpose, practically elementary school graduates. One test was in accurate copying and the other in written memory work. The test in accurate copying consisted of a paragraph carefully chosen so as to include a variety of the mechanical elements of composition, of which paragraph pupils were asked to copy accurately as much as they could in fifteen minutes. The results have not yet been completely tabulated but a cursory review of some of the papers reveals the fact that some pupils made as many as forty or fifty mistakes in copying these fifteen lines of simple prose, and that very few pupils made less than a half dozen mistakes. From this test, the tentative standard will be fixed in terms of what pupils showed in this test they were able to do.

The test in written memory work was for the purpose of finding out how much of the fifty lines of classic prose or poetry required by the course of study and by these "minimum standards" the pupils remembered. The general result shows that very few of the 4,000 children tested remembered much that they were able to write in an intelligible manner. Since this is so, it becomes necessary to decide certain important matters. Considering the fact that some of these pupils undoubtedly did know fifty lines of classic prose or poetry at one time, was teaching it worth while if they have so soon forgotten it? Again, should they be expected to remember it for a longer time than most of them did? Also, if children forget so soon such memory work, is it of sufficient importance to set up a standard? If one assumes, on the other hand, that some of these pupils had never been properly taught the amount of prose or poetry specified in the course of study, and if such work is deemed worth while, the requirement should be insisted on.

The tentative standards in letter writing and in dictation will be similarly tested this spring. The other standards will be tested later.

SCIENTIFIC EXPERIMENTATION

As a result of giving the Courtis standard tests in arithmetic in Boston for several years, much valuable information concerning the arithmetical ability of pupils in performing the four fundamental operations has been obtained. In arithmetic, as in no other subject, the exact measurement of educational results has advanced to that stage where scientific experimentation is possible and practicable.

The Courtis tests have revealed great variations in the ability of pupils to add, subtract, multiply and divide. They have shown that we have at the present time practically all grades of ability from the fourth to the eighth in each class tested. Twenty-nine per cent. of the pupils in the eighth grade could exchange places with a like number of pupils in the fourth grade without changing in the slightest the arithmetical ability in the fundamental operations of either class as a class.

The tests also show that from 35 to 50 per cent. of the children tested in any one grade did not increase their ability at all in addition, subtraction, multiplication and division from the time the tests were given in January until they were given in April—a period of about three months. This means that the children in these grades have apparently not profited in the least by the instruction given. For example, in the eighth grade in division, 32 per cent. of the children tested showed no increase in ability to divide correctly. Also, in the fourth grade 50 per cent. of the children tested showed no increased ability

whatever in division, although that is the particular topic of instruction in arithmetic in the fourth grade.

What is the reason for these conditions? It seems probable that the drill work in the fundamentals carried on at the present time is not adapted to all pupils. In fact, it is probable that there is no one drill that is equally well adapted to any considerable number of pupils. Some pupils who do profit by a drill get more than they need under present conditions, while those who do not profit by it are merely marking time, or, as is shown by these tests, are actually declining in ability. This means that by class drills the variations in ability among pupils are being constantly increased rather than decreased.

The Courtis tests are simply means to an end, that end being the improvement of the work of the children. The tests merely reveal conditions. It is necessary to provide ways and means of improving those conditions if they are unsatisfactory. This means providing the teacher with the desirable material for bringing as many pupils as possible up to the established standard of achievement in each one of the four fundamental operations.

The Board of Superintendents has from time to time authorized for use fourteen different kinds of practise work in the four fundamentals. After the testing in October, masters of schools were invited to select such practise material as they desired to use during the year. Several different kinds are being used in each elementary school. At the close of this year's work not only will the children be tested, but reports will be secured from masters and teachers as to the value of the practise material used. From these two sources of information it should be possible to learn what kind of practise work has best accomplished its purpose.

METHODS OF CARRYING ON THE WORK IN BOSTON

In carrying on the work of the department, the purpose has been to utilize all other educational agencies rather than to build up a separate staff of workers. Our ideal has been to organize our work in such a way that all of Boston's school people will be contributing in their respective ways to the solution of Boston's educational problems.

For special examiners in arithmetic, we use the seniors in the Boston Normal School, whose whole time is assigned to this department for the month of April. During that time, these seniors are instructed in the theory of scientific testing in general and of the Courtis system of testing in particular, and are trained to give the tests in the schools. They do this work not only because we want the work done, but also because it is considered an important part of their normal-school training to become acquainted with this phase of educational work. Their success in this work is counted toward their final grades in the normal school, which grades in turn determine their places on the merit list of eligible teachers.

For some kinds of testing work special examiners are not needed. To supervise the giving of such tests, we have asked each master of an elementary district to select some person in his district, who is qualified by interest and training, to see that all instructions for giving the tests are carried out in his district.

For the clerical work connected with the statistical compilations in the office, girls from the recently organized clerical school are employed. The whole daily time of three groups of ten girls each was given us for twelve days during the past month. This work, too, was looked upon

by the clerical school as an experience and training which were valuable to the girls, who worked according to business hours and did their work willingly, conscientiously and effectively.

To relieve the teachers whose classes are tested of as much of the work connected with the tests as possible, we shall more and more invite the cooperation of the normal-school teachers and their classes of prospective teachers. The results of a test will provide valuable material for discussion in a normal school class and some practise in judging the results of a test will prove helpful to those who are soon to become teachers.

For systematic workers in the department from time to time as various investigations are undertaken, the school committee is asked to relieve persons from their regular work and assign them to work temporarily in this department. By far the larger part of the work of the department, however, is carried on through voluntary committee service.

At present, there are committees on standards in the following subjects: English, arithmetic, geography, history, spelling and penmanship. These committees are distinct from the various committees on course of study and are made up of representative teachers in the city. Their chief interest is the establishment of objective standards of achievement on the basis of the scientific testing of pupils. The chairmen of these committess form an advisory committee for the department to consider all matters connected with the department's work on educational measurement.

THE PLAN OF PROMOTING TEACHERS ON THE BASIS OF MERIT

When the department was organized in Boston last April, it was understood that one of its first tasks would be to work out a plan for promoting teachers to higher ranks on the basis of merit. In educational circles, the desirability of such a system of promotion is no longer a subject for debate; it is conceded to be necessary. The difficult question is how to organize a plan for measuring merit that shall result in a reasonably effective merit list of candidates for promotion. This is one of the problems to which the department is devoting much attention.

Each of the six assistant superintendents rates teachers of every grade or rank in his or her geographical district every two years. These ratings are on file in the superintendent's office and are the only available evidence which the superintendent has which indicates the degree of success being attained by candidates for promotion. No ratings are secured from masters directly, although it is the practise of some of the assistant superintendents to rate teachers in consultation with the master of the school.

The general plan for rating the efficiency of candidates for promotion is being worked out in conferences with the candidates themselves. As a result of several conferences held last spring, it was agreed that independent ratings should be secured from the assistant superintendent, from the master of the school and from the director of promotion and educational measurement. The immediate work of this department is to determine on what fact basis a rating should be given and then to devise a uniform plan to be used by all who do the rating. The aim is to secure a system whereby every promotion to a higher position in the service shall be made on the basis of merit. All original appointments to the Boston school service are now made from a merit list.

PRINCIPLES ACCORDING TO WHICH THE WORK OF THE DEPARTMENT IS ORGANIZED AND CARRIED ON

By way of summary and for the purpose of emphasizing some general considerations which seem to me particularly important, the principles which have determined the scope and methods of the work in Boston may be stated briefly as follows:

1. While the department in Boston conceives its function to be investigation of any educational problem within the public school system, our theory has been that the department, like any other educational agency, must justify its existence and measure its usefulness by the extent to which it contributes directly or indirectly to the improvement of the instruction which the pupils receive.

2. The cooperative method of carrying on the work of the department promotes a scientific attitude among the teaching profession and gives every person and every educational agency an opportunity to play its part in the solution of Boston's educational problems. By its teacher-committees on the course of study, by its committees on educational measurement work, by its introduction of the normal school seniors to the practical significance of scientific testing, by its utilization of clerical school pupils for computations, by its policy of relieving school people in order that they may study special educational problems—by these the department believes it is providing the educational profession with its rightful opportunity to help solve the educational problems of the city.

3. The department is conscious of the fact that those phases of any subject in which tests are given will inevitably be emphasized by teachers in their teaching, either consciously or unconsciously. In this fact lies both the hope and the danger of educational measurement. If the tests are confined to important phases of a subject, emphasis on these in teaching is desirable and legitimate. If, on the other hand, the testing work results in undue emphasis on unimportant phases of subjects, then it is correspondingly unsatisfactory. By attempting to define in the beginning the minimum essentials in each subject, the department has actually bounded the field in which tests can wisely be given and has thereby reduced to a minimum this danger.

4. As far as possible teachers are relieved of all purely clerical work and their correction of the results of any tests except those in arithmetic will hereafter be on a voluntary basis.

I have described very briefly what the department of educational investigation and measurement in Boston is trying to do and the means by which it hopes to accomplish it. Naturally the work is in its initial stages and in most cases we have not yet proceeded far enough to obtain tangible results. Our methods of work are largely experimental; we are learning to do by doing. In spite of the usual difficulties which attend the introduction of such work in a large city school system, the future is decidedly promising.

Frank W. Ballou

Boston

THE VENTILATION AND SANITATION OF SCHOOL HOUSES[1]

Since we force the child by law to live under the conditions of the classroom for so many hours a day, and so many days in the year, we might naturally expect to find the schoolhouse a model of perfect sanitation, not only unexceptionable in itself, but

[1] Address delivered before New Jersey Sanitary Association, Lakewood, N. J., December 11, 1914, by C.-E. A. Winslow, director Division Publicity and Education, N. Y. State Department of Health.

an example to teach the future citizens what to demand in their own homes and workplaces. The actual conditions, however, particularly in the rural districts, fall far short of such an ideal. Professor T. D. Wood, of Teachers College, in summarizing the results of a study made by a joint committee of the American Medical Association and the National Council of Education, says:

> The country schoolhouse, except in the few states where some advance has been made for the betterment of the rural districts, is invariably burdened with bad ventilation. Heating is a hit-or-miss affair by means of the unjacketed school stove, resulting in lowered vitality for both pupils and teacher. Seating accommodations are so bad that it is small wonder that we found 3.5 per cent. of the country school children with spinal curvature, as against .13 per cent. of the city school children with the same defect.
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> The general sanitary conditions are often unspeakable—right here in New York state, where sanitary regulation is supposed to be in force, there exist accommodations worse than any which the lowest type of factory has to offer its adult workers.
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> Washing facilities are either not provided at all, or consist of a pail of water, a dirty basin, and a common towel. Drinking facilities are invariably worse. There is seldom anything other than the common drinking cup, which has been banned in our cities for the children of our slums. If there is a cistern it is all too often located without any reference whatever to the drainage. The water in many of these cisterns was found to be so badly contaminated that it was a serious menace to the children who were using it daily.
>
> Often the drinking facilities are provided for only by an old water pail, frequently found unprotected in the rural coatroom, sometimes it is covered by the hat of one of the girls—sometimes a towel dangles above it, with the wash basin on one side and the broom on the other.

I imagine that these strictures of Professor Wood will apply less widely in your state than in almost any other state of the Union; for we all look with admiration to the efficient state health department, and the admirable local health organizations of New Jersey. Even here, however, a brief résumé of the essentials of school sanitation may be deserving of your consideration.

The most common harmful conditions in the schoolroom are probably those due to bad air. Recent studies have considerably changed our ideas as to why bad air is bad, but have in no wise modified the conclusions of common experience as to its essential badness. The investigations of many English and German physiologists, and more recently of the N. Y. State Commission on Ventilation, have shown that there are no peculiar poisons in breathed air, and that the sensations experienced in a close room are not due in the main to any chemical changes in the air, but to its physical condition as regards temperature and humidity—that as Professor Lee has epigrammatically put it, "the chief problems of ventilation are not chemical, but physical—not respiratory, but cutaneous." In the worst ventilated schoolroom, the decrease in oxygen and the increase in carbon dioxid never reach a point at which they have any appreciable physiological effect. On the other hand, the overheating of the classroom is very often such as to produce a marked influence upon the human mechanism. The recent studies of the N. Y. State Commission on Ventilation have shown that even a room temperature of 75 degrees produces an increase in body temperature and heart rate, a fall in blood pressure and a diminished vaso-motor tone. The power to work under maximal stimulation is not affected, but the inclination to do physical work is markedly decreased by high temperatures. When the incentive to work was not great, the subjects in our N. Y. State Commission experiments actually accomplished 15 per cent. less physical work at 75 degrees and 37 per cent. less at 86 degrees than at 68 degrees.

Another evil effect of overheated rooms, which is probably of serious moment, is the predisposing influence of heat upon the susceptibility to communicable diseases of the nose and throat. Dr. Leonard Hill has observed that in a hot room the mucous membranes of the nose became hyperemic and finally hypertrophied, and that such membranes lose their natural power of resistance, and when subsequently chilled are easily invaded by the parasitic organisms which cause colds and pneumonias.

In contradistinction to these various harmful effects of hot air, the experiments of many observers, including the N. Y. State Commission on Ventilation, indicate that no physiological effects and no diminution of physical or mental efficiency, and no discomfort, can be traced to the chemical pollution of breathed air, the subjects shut up in a chamber with twenty to forty parts of carbon dioxid behaving and feeling exactly as they do when supplied with 45 cubic feet of air per minute, provided the temperature is the same in both cases. We did find, in two series of experiments, a slight but distinct difference between the appetites of the subjects in the two cases, the men consuming on an average about ten per cent. less of a standard luncheon in the close room than when supplied with air. A third series, however, gave negative results.

Public decency, if not public health, certainly demands that the air of schoolrooms and other occupied places should be kept free from the unpleasant odors generated by human bodies and human clothing in a close room. So far as I am aware, the practise of bathing, except for the washing of hands before eating, has no sanitary justification and Sir Almoth Wright believes it to be positively harmful when carried to excess. Keeping the air of the schoolroom clean and fresh-smelling may, like bathing, be justified on the ground of decency, at least.

Both overheating and odors may most effectively be guarded against by a plentiful supply of fresh air, and the new views upon this subject do not in the least imply that ventilation is unnecessary, but rather give us a clearer view of what good ventilation really is. The human body is constantly producing heat as well as carbon dioxid, and a calculation of the amount of air which must be supplied at 60 degrees to remove the bodily heat and keep the room temperature below 70 degrees works out at about 30 cubic feet per capita, justifying even the quantitative standards formulated on the basis of carbon-dioxid dilution.

In rooms occupied by a small number of persons, ventilation may easily be accomplished by means of windows. In a crowded schoolroom, however, window ventilation is apt to prove unsatisfactory on account of resulting inequalities of distribution. Children near the windows object to drafts of untempered outdoor air, while those on the inner side of the room suffer when the windows are closed. Window-boards, deflectors and cloth window screens lessen the difficulty, but as a rule much better results can be attained by some method of tempering the incoming air. In a rural school where an elaborate ventilating system is impossible, the jacketed stove offers the best practical solution of this problem.

The report on Minimum Sanitary Requirements for Rural Schools prepared by Professor Wood for the joint committees on health problems in education of the national council of the National Education Association and of the American Medical Association well discusses this problem as follows:

> The schoolroom should always receive fresh air coming directly from out of doors in one of the following arrangements:

(*a*) Through wide open windows in mild weather.

(*b*) Through window-board ventilators under all other conditions, except when, with furnace or jacketed stove, special and adequate inlets and exits for air are provided.

Heating.—Unless furnace or some other basement system of heating is installed, at least a properly jacketed stove is required. (No unjacketed stove should be tolerated in any school.)

The jacketed stove should have a direct fresh air inlet about 12 inches square, opening through the wall of the schoolhouse into the jacket against the middle or hottest part of the stove.

The exit for foul air should be through an opening at least 16 inches square on the wall near the floor, on the same side of the room as the stove is located.

A fireplace with flue adjoining the stove chimney makes a good exit for bad air.

In larger school buildings, fan ventilation will usually be found desirable, since only by a well-designed and well-operated central system can good air conditions be uniformly maintained. If the results of the experiments recently carried out at Minneapolis and Springfield, Mass., on the use of re-circulated air drawn off to a chamber where it is washed free from dust and odors and heated or cooled, and dried or humidified to adjust its physical conditions to an ideal standard before it is returned to the rooms, are confirmed by other studies now in progress, fan ventilation will prove a distinct economy, since the saving of fuel effected by recirculation should easily outbalance interest charges on the cost of a ventilating plant.

In the use of any mechanical system of ventilation, it must be remembered, however, that operation is as important a factor as design. In the study of school ventilation in New York City, conducted by Professor Baskerville and myself, we found that while the window-ventilated schools were on the whole mediocre in regard to air conditions, the fan-ventilated buildings were some of them almost perfect, and others very bad, depending on the faithfulness and intelligence of the janitor in charge. A careless janitor can discredit the most perfect ventilating plant which the engineer can design.

Whatever the system or lack of system in use for ventilation, it is a prime essential for the healthfulness of the school that a thermometer should be placed in every room and that constant watchfulness should be exercised by some one to see that it does not exceed 70 degrees. In a study made by Dr. Helen C. Putnam of 600 city schoolrooms, it was found that only 210 had thermometers. Of the 210, one third were out of order and of the remaining 140 only 20 registered under 72 degrees. I fear that such conditions as indicated by this study are by no means rare.

Whatever the normal conditions maintained by the ventilating system, an occasional blowing out of the whole schoolroom with cool outside air, by opening all the windows every hour or so while the children move about, gives a freshening stimulus to the children well worth the time it costs. For subnormal children the provision of an open air school (or open window classroom) is a valuable tonic which must, however, be accompanied by special provisions for heavy clothing and usually for special feeding as well.

Next to ventilation, the lighting of the school room is perhaps the most important general health problem involved in school construction. Many a child develops symptoms of eye strain and falls behind in its work and in general mental condition because of poor schoolroom lighting. Bad lighting may mean too little light or quite as often an improper arrangement of light which produces a glare in the eyes either directly from window or lamp or indirectly from a polished blackboard, desk surface, or the like. Cross lights, too, are often most objectionable. With natural il-

lumination, the window area should be at least one fifth of the floor area and the light should come from the left side of the pupils or from above. With artificial illumination, indirect lighting is far more efficient and more hygienic than any other form.

The report on Minimum Requirements for Rural Schools makes the following minimum recommendations in regard to lighting:

> The schoolroom should receive an abundance of light, sufficient for darkest days, with all parts of the room adequately illuminated.
>
> The area of glass in windows should be from one fifth to one fourth of the floor area.
>
> The best arrangement, according to present ideas, is to have the light come only from the left side of the pupils and from the long wall of the classroom. Windows may be allowed on rear as well as on the left side. High windows not less than 7 feet from the floor may be permitted on the right side as an aid to cross ventilation, but not for lighting.
>
> There should be no trees or shrubbery near the schoolhouse which will interfere with the lighting of the classroom.
>
> The school building should so face with reference to the windows that the schoolroom will receive the direct sunlight at some time during the day.
>
> Shades should be provided at tops and bottoms of windows with the dark shades at top, so that light may be properly controlled on bright days.
>
> *Schoolroom Colors.*—The best colors for the schoolroom in relation to lighting are: Ceiling—white and light cream; walls—light gray-green; blackboards—black.

The nature of the school-room furniture must also be taken into account in considering the influence of the school upon the health of the child. Posture involves hygienic problems of far greater importance than is often realized. Where the seat is too low or too high for the desk, or too far away or too near, there results a painful crouching or straining or twisting which may easily produce profound harmful physiological effects. Adjustable seats and desks (actually adjusted, and not permanently rusted into some chance position) furnish the only completely satisfactory solution of this problem, but temporary alterations (such as screwing a board under desk or chair) and careful assignment of seats where several types are available, may do much to minimize the evil.

Bad ventilating, bad lighting and bad seating are the principal factors in lowering general vital conditions and promoting the development of physical defects in the school. Another group of problems remains to be considered in connection with facilities for the spread of communicable diseases, such as diphtheria, scarlet fever, measles and whooping cough which prevail principally at the school age, and which, one and all, constitute serious and important dangers to the public health.

The detection and isolation of infected individuals is, of course, one of the most important safeguards against communicable disease, but the occurrence of carrier cases and the fact that these diseases, particularly measles, may be actively contagious before their nature can be recognized, makes it essential to erect the most efficient possible safeguards against the exchange of nasal and oral secretions between the apparently well.

General cleanliness is of some significance in this connection, and the Report on Minimum Requirements wisely provides that

> the schoolhouse and surroundings should be kept as clean as a good housekeeper keeps her home.
>
> (*a*) No dry sweeping or dusting should be allowed.
>
> (*b*) Floors and furniture should be cleaned with damp sweepers and oily cloths.
>
> (*c*) Scrubbing and airing are better than any form of fumigation.

Personal cleanliness is the main factor, however, and the elimination of such vehicles of disease as the common drinking

cup and the common towel with the provision of facilities for hand-washing and requirements as to their use, are of prime importance in checking the spread of microbic disease.

A recent study conducted by the United States Public Health Service showed that out of 75 country schools in Indiana, 8 only had individual drinking cups and 24 only the common drinking cup, while in 43 schools the value of the individual cups provided was minimized by the presence of a common cup as well.

The minimum requirements for rural schools provide that

drinking water should be available for every pupil at any time of day which does not interfere with the school program.

Every rural school should have a sanitary drinking fountain located just inside or outside the schoolhouse entrance.

Drinking water should come from a safe source. Its purity should be certified by an examination by the State Board of Health or by some other equally reliable authority.

A common drinking cup is always dangerous and should never be tolerated.

Individual drinking cups are theoretically, and in some conditions all right, but practical experience has proved that in schools, individual cups, to be used more than once, are unsatisfactory and unhygienic. Therefore, they are not to be advocated nor approved for any school.

Sufficient pressure for running water for drinking fountain or other uses in the rural school may always be provided from any source without excessive expense by a storage tank or by pressure tank with force pump.

Where bubble fountains are not available the children should be taught to fold cups out of paper.

In regard to washing facilities, the provisions of the minimum requirements are especially to be commended.

Children in all schools should have facilities for washing hands available at least:

(*a*) Always after the use of the toilet.

(*b*) Always before eating.

(*c*) Frequently after playing outdoors, writing on blackboard or doing other forms of handwork connected with the school.

Individual clean towels should always be used.

Paper towels are the cheapest and most practicable.

The common towel is as dangerous to health as the common drinking cup.

It may also be noted that the common wash basin, sometimes used where a supply of water is scanty, by a number of children, without emptying, is almost as dangerous as the common towel.

Toilet facilities should be ample and conveniently situated and well lighted and clean, and protected against flies. Communicable diseases are spread by human excreta and if toilet rooms are not well lighted, uncleanness will surely result with its probable consequence, the transmission of disease. In the country school the greatest precautions must be taken that toilets are fly proof or excretal germs will inevitably be distributed by means of insects. In the Indiana study, Dr. Hydegger, the investigator, says of the outhouses in rural schools.

In many the conditions were unspeakably dirty and insanitary, being filled with excreta almost to the seat. . . . The vast majority of these outhouses are simply set on the ground and are freely open beneath and at the back, thereby allowing free access of flies, animals, etc., to the excreta. In a considerable number of outhouses objectionable odors were so strong as to make it practically impossible to remain within.

The minimum requirements on this point provide that:

Toilets and privies should be sanitary in location, construction and in maintenance.

(*a*) If water carriage system for sewage is available, separate toilets for boys and girls should be located in the schoolhouse with separate entrances on different sides or corners of the school building.

(*b*) If there is no water carriage system, separate privies should be located at least 50 feet in the different directions from the schoolhouse, with the entrances well screened.

(*c*) The privy should be rainproof, well ventilated and one of the following types:

1. Dry earth closet.
2. Septic tank container.
3. With a water-tight vault or box.

All containers of excreta should be water-tight, thoroughly screened against insects and easily emptied and cleaned at frequent intervals.

How shall we secure all these eminently desirable ends? So far as the original construction of school buildings is concerned, health officers and school superintendents such as are represented in this association can see that everything possible is done to safeguard the health of the school child. But what about conditions of actual operation? Who is to see that the ventilating system does not aggravate conditions by blowing in overheated air, that in window ventilated schools windows are not kept tightly closed, that adjustable seats are not left unadjusted, that individual drinking cups do not become common drinking cups, and toilets centers for the spread of filth diseases? No occasional inspector, but only some one actually on the ground can guard against these things.

In most colleges there is a faculty committee on hygiene and sanitation, and, much as I dislike adding a new burden to the already overburdened teacher, I believe that the organization of some such committee, or best, perhaps, the appointment of a single teacher to the task, is a necessary step toward good sanitary and hygienic conditions in the school.

Dr. Putnam has suggested that in each classroom a pupil health officer should be appointed to read the thermometer each hour, and the enlistment of pupils in this general work would have the greatest educational value, as well as being of immediate practical assistance.

Since good air, good light, good seating, good water and clean toilets are as necessary as we now believe them to be for the well-being of the child, it should be the task of some one in each schoolhouse to see that they are secured. If in each school one teacher were appointed sanitary supervisor to study and to watch from day to day the heating and lighting and seating and toilet facilities, perhaps with the aid of students, to observe temperatures and the like, it would be a notable gain for education and for health.

C.-E. A. Winslow
N. Y. State Department of Health

EDUCATIONAL EVENTS

THE PRESIDENT'S VETO OF THE IMMIGRATION BILL

The text of the message of the President to Congress vetoing the Immigration Bill is as follows:

It is with unaffected regret that I find myself constrained by clear conviction to return this bill [H. R. 6,060, an act to regulate the immigration of aliens to and the residence of aliens in the United States] without my signature.

Not only do I feel it to be a serious matter to exercise the power of veto in any case, because it involves opposing the single judgment of the President to the judgment of a majority of both houses of the congress, a step which no man who realizes his own liability to error can take without great hesitation, but also because this particular bill is in so many important respects admirable, well conceived and desirable.

Its enactment into law would undoubtedly enhance the efficiency and improve the methods of handling the important branch of the public service to which it relates, but candor and a sense of duty with regard to the responsibility so clearly imposed upon me by the constitution in matters of legislation leave me no choice but to dissent.

In two particulars of vital consequence this bill embodies a radical departure from the traditional and long-established policy of this country, a policy in which our people have conceived the very character of their government to be expressed, the very mission and spirit of the nation in respect of its relations to the peoples of the world outside their borders. It seeks to all but close entirely the gates of asylum which have always been open to those who could find nowhere else the right and opportunity of constitutional agitation for what they conceived to be the natural and inalienable rights of men, and it excludes those to whom the

opportunities of elementary education have been denied, without regard to their character, their purposes or their natural capacity.

Restrictions like these adopted earlier in our history as a nation would very materially have altered the course and cooled the humane ardors of our politics. The right of political asylum has brought to this country many a man of noble character and elevated purpose, who was marked as an outlaw in his own less fortunate land, and who has yet become an ornament to our citizenship and to our public councils.

The children and the compatriots of these illustrious Americans must stand amazed to see the representatives of their nation now resolved, in the fulness of our national strength and at the maturity of our great institutions, to risk turning such men back from our shores without test of quality or of purpose. It is difficult for me to believe that the full effect of this feature of the bill was realized when it was framed and adopted, and it is impossible for me to assent to it in the form in which it is here cast.

The literacy test and the tests and restrictions which accompany it, constitute an even more radical change in the policy of the nation. Hitherto we have generously kept our doors open to all who were not unfitted by reason of disease or incapacity for self-support or such personal records and antecedents as were likely to make them a menace to our peace and order or to the wholesome and essential relationships of life. In this bill it is proposed to turn away from tests of character and of quality and to impose tests which exclude and restrict; for the new tests here embodied are not tests of quality or of character or of personal fitness, but tests of opportunity. Those who come seeking opportunity are not to be admitted unless they have already had one of the chief of the opportunities they seek—the opportunity of education. The object of such provisions is restriction, not selection.

If the people of this country have made up their minds to limit the number of immigrants by arbitrary tests, and so reverse the policy of all the generations of Americans that have gone before them, it is their right to do so. I am their servant and have no license to stand in their way. But I do not believe that they have.

I respectfully submit that no one can quote their mandate to that effect. Has any political party ever avowed a policy of restriction in this fundamental matter, gone to the country on it, and been commissioned to control its legislation? Does this bill rest upon the conscious and universal assent and desire of the American people? I doubt it. It is because I doubt it that I make bold to dissent from it. I am willing to abide by the verdict, but not until it has been rendered. Let the platforms of parties speak out upon this policy and that people pronounce their wish. The matter is too fundamental to be settled otherwise.

I have no pride of opinion on this question. I am not foolish enough to profess to know the wishes and ideals of America better than the body of her chosen representatives know them. I only want instruction direct from those whose fortunes with ours and all men's are involved.

PENNSYLVANIA RURAL SCHOOLS

AT a meeting of the Pennsylvania State Educational Association held in Pittsburgh on January 1, 1914, a committee was appointed to make a complete study of the condition and needs of the rural schools of the state, including the adjustment of industrial education to the needs of small communities. As finally constituted the committee consisted of State Supt. Nathan C. Schaeffer, *chairman;* Dr. Raymond W. Sies, University of Pittsburgh; Dr. Louis W. Rapeer, State College; Dr. Harlan Updegraff, University of Pennsylvania; County Supt. G. B. Milnor, Muncy, Lycoming County, and County Supt. Frank A. McClung, Butler, Butler County. This committee has made the following recommendations:

1. That Section 1211 of the School Code adding $5 per month to the minimum salary of teachers be made operative by the necessary appropriation.

2. That the legislature provide the funds for paying the salaries of the assistant county superintendents.

3. That the county commissioners be required to furnish by law the office of the county superintendent with a telephone, a typewriter and with an executive clerk, who shall also be an expert stenographer.

4. That special assistance be given to rural districts which can not secure the needed funds for the erection of better buildings and the maintenance of their schools during a term of seven months.

5. That in any revision of the present system of taxation state uniformity of taxation for school purposes be carefully considered.

6. That the county unit of school administration

be adopted so far as feasible, including county uniformity of taxation for school purposes, and that a small county board of education be elected at large with the following powers: (1) To levy a county school tax. (2) To elect the county superintendent of schools and his assistants. (3) To have general supervision of attendance officers throughout the county. (4) To furnish supplies at the expense of local boards, when they fail to do so promptly. (5) To fix the boundaries of local school districts regardless of township lines. And that all other powers now conferred by the school code upon local authorities be exercised by local boards.

7. That all reelections of supervising principals be subject to the approval of the county superintendent.

8. That local school boards be encouraged by adequate means to organize night schools for foreigners in all districts where such schools are needed.

9. That the present system of county institutes and county directors' conventions be continued and that the programs be made helpful rather than entertaining.

10. That the efforts of teachers and county superintendents to establish social centers in rural schools be highly commended.

11. That the compulsory education laws be further amended so as to reach more effectively the unemployed between 14 and 16 years of age, including the provision of attendance officers not members of school boards, and the requirement that the employment certificates of children between the ages named be returned immediately to the school authorities whenever employment ceases.

12. That the normal schools provide courses on the improvement of rural life, as well as courses in agriculture.

13. That the normal schools provide one-room rural schools for observation, experiment and practise teaching, such model schools to be located in the open country convenient to the normal schools.

14. That one of the following plans for furnishing more trained teachers for the rural schools be adopted: (1) An increase of the facilities for training teachers in existing normal schools. (2) An increase in the number of state normal schools. (3) Empowering high schools approved by the state board of education to add post-graduate two-year courses for training teachers, such courses to be under the supervision of the state department of public instruction.

15. That the establishment of rural high schools with departments for teaching agriculture and domestic science be encouraged by a larger appropriation.

16. That the provisions of the Smith-Lever bill for agricultural extension receive the hearty support of all school officials in Pennsylvania.

17. That the plans for one-room, two-room and three-room buildings be brought to the attention of school directors and rural committees.

18. That state appropriation be withheld from districts in which school buildings and grounds are not in a thoroughly sanitary condition.

19. That medical inspection be made obligatory in all rural districts and that wherever possible school nurses in the employ of the school board visit the homes to secure proper medical attention to the children in need of help.

20. That the state educational association appoint committees for a thorough study of the following problems: (1) The distribution of state school funds. (2) The training of teachers for rural schools. (3) The standardization of the rural school plant.

BILLS INTRODUCED IN THE UNITED STATES CONGRESS

THE Bureau of Education has begun the publication of "legislative circulars" giving information in regard to legislation of educational interest. Bills are reported to have been introduced in congress as follows:

H. R. 16,952 (Smith-Hughes Bill).—*To promote vocational education by providing federal money to be used in cooperation with the states in the promotion of education in agriculture, trades and industries and in the preparation of teachers for vocational subjects.* This bill was submitted by the Commission on National Aid to Vocational Education appointed by the President in February, 1914, and succeeds the Page Bill. It provides:

A federal board for vocational education for the administration of the funds proposed, to be composed of the Secretaries of the Interior, Agriculture, Commerce, Labor and the Postmaster General, with the Commissioner of Education as executive officer.

For the purpose of cooperating with the states in paying the salaries of teachers, supervisors or directors of agricultural subjects, the bill provides $500,000 the first year, increasing by $250,000 a year until the total amounts to $2,000,000, then increasing yearly by $500,000 until the total

reaches $3,000,000, this sum then to become an annual appropriation. Aid is to be allotted to the states in the proportion their rural population bears to the total rural population of the United States, not including outlying possessions; minimum per fiscal year to any state, $5,000, and $10,000 after June 30, 1922.

For the purpose of cooperating with the states in paying the salaries of teachers of trade and industrial subjects, the same amounts, to be allotted to the states in proportion to their urban population; with the same minimum provision as above.

For the purpose of cooperating with the states in preparing teachers, supervisors and directors of agricultural subjects, and teachers of trade and industrial and home economics subjects, $500,000 the first year, $700,000 the second year, $900,000 the third year, and annually thereafter $1,000,000, to be allotted to the states in proportion to their total population; minimum amount per fiscal year to any state, $5,000 and $10,000 after June 30, 1918.

To receive any of these appropriations, each state must designate or create a state board to cooperate with the federal board for vocational education in the administration of the act. Any state may accept the benefits of any one or more of the respective funds, provided that for every dollar of federal money expended for salaries of teachers, etc., as provided by this act the state or local community or both shall expend an equal amount for such salaries. The state or local community must also furnish plant and equipment. The state board is required to submit to the federal board for vocational education plans showing the kinds of vocational education for which it is proposed to use the federal money and kinds of schools and equipment, courses of study, methods of instruction, etc. The federal board shall approve these plans if they conform to the provisions and purpose of the federal act.

S. 4,881 (Lewis).—*To create a national university of the United States at the seat of the federal government*, for the purpose of promoting the advance of science, pure and applied, and of the liberal and fine arts by original investigation and research, and by other suitable means; to provide for the higher instruction and training of men and women for posts of importance and responsibility in the public service of state and nation and for the practise of such callings and professions as may require for their worthy pursuit a higher training; and to cooperate with the scientific departments of the federal government, with the federal land grant colleges founded on the land grant of 1862, with the state universities, and with other institutions of higher learning throughout the country. Persons to be admitted must have B.S. or B.A. degree from an institution of recognized standing, or have pursued an equivalent course.

Provides for board of trustees to consist of the United States Commissioner of Education and 12 other members appointed by the President of the United States, and for an advisory council to consist of the president of the state university in each state in which there is a state university, and of one citizen of the state, learned and experienced in educational matters, appointed by the governor of each state in which there is no state university.

Unconditional legacies, gifts, etc., may be accepted by the board of trustees for the benefit of the university, but no conditional legacy, gift, etc., can be accepted unless the conditions be approved by the board of trustees, the advisory council and the congress of the United States. The bill provides $500,000 for the use of the university the first fiscal year.

(This bill is practically the same as H. R. 11,749, introduced by Mr. Fess January 16, 1914. It differs from the Fess Bill only by not specifically providing that no academic degree is to be conferred, and that the acting president of the state university is to be a member of the advisory council when there is no state university president in office; and by not providing that the federal museums, libraries, bureaus, observatories and departments of expert research are to be open for the use of graduate students.)

H. R. 17,310 (Hughes).—*To provide for the publication of elementary text-books at actual cost to the state by the federal public printer for the use of the state school systems*, whenever an authorized state official or board shall furnish free the manuscript of the book to be published and request the printing thereof.

H. R. 15,219 (French).—*To further the economic use of forests and forest lands, and the training of forestry students in collegiate institutions that are or may be aided by states in which are federal forest reserves.* The bill provides for an annual appropriation of five per centum (total not to exceed $15,000 to one state) of the receipts of the forest areas in the respective states, for the endowment of a forest school to be designated by the state legislature, or previous to this

designation, by the governor of the state. The appropriation is not to be used for building or repair work, or for the purchase or rental of land.

H. R. 15,470 (Abercrombie).—*To require the Commissioner of Education to devise methods and promote plans for the elimination of adult illiteracy in the United States.* The commissioner shall investigate methods that have been and are now used either in the United States or in foreign countries to eliminate adult illiteracy; devise plans to eliminate adult illiteracy in the United States, and cooperate with state, county, district and municipal education officers, to carry out these plans. To carry out these provisions, the bill provides $15,000 the first fiscal year, $22,500 each succeeding year until June 30, 1920, and then $17,500 yearly until June 30, 1925. No part of the appropriations shall be used for teaching or supervising schools. The commissioner shall not undertake to promote the teaching of adult illiterates in any jurisdiction without the written invitation or consent of the board of education or the chief school officer of the respective state, territory or District of Columbia.

H. R. 14,805 (Hughes).—*To create a federal motion picture commission as a division of the Bureau of Education, to be composed of five commissioners appointed by the President.* The commissioner is to be empowered to license films used in interstate commerce, and to refuse licenses for films that would tend to corrupt the morals of children or adults or incite to crime; it is also to be empowered to withdraw a license for cause. No copyright shall be issued for a film unless approved by the commission, and provision is made for penalty for violating these provisions in interstate commerce, or in any place under the jurisdiction of the United States.

S. 6,957 (Gallinger).—*To establish a board of university regents of the District of Columbia.* The board is to consist of nine persons appointed by the president, the appointees to be United States citizens and resident in the states, and expert in college and university education and administration; at all times three to be representative of the state and colleges and universities, three of private colleges and three of the general educational interests of the United States. The bill gives to the board control of the standards of all colleges and universities in the District of Columbia, except that the requirements shall not be greater than the maximum insisted upon in any state in the union and that the act shall not restrict or affect in any way the power of certain designated institutions in the District of Columbia to grant degrees. The board is to have control of the approving of incorporation of any college, university or other degree-granting institution desiring to incorporate in the District of Columbia; shall have power to ratify any conveyance by any college or university in the District of Columbia incorporated by or under act of congress, to any other college or university; shall collect information concerning the advisability of congress establishing a nation-university in the District of Columbia, and upon request by any college or university of the United States may issue a certificate of approval of any post-graduate degree proposed to be granted by the institution.

H. R. 15,904 (Miller).—*To create a bureau for the deaf and dumb in the Department of Labor, and to study the industrial, social and educational condition of the deaf and dumb throughout the United States.* The bureau is to make inquiry and study of the trades, industries and occupations most suitable for the deaf and dumb, and promote their advancement in such occupations; to study the methods in use in the education of the deaf and dumb; and to give the information and statistics thus secured to the public by means of reports, etc. The bureau is to gather statistics of the educational, industrial and social conditions of the deaf in foreign countries.

EDUCATIONAL NOTES AND NEWS

MR. THOMAS W. CHURCHILL was reelected president of the board of education of New York City on February 1. The vote was 26 for Mr. Churchill, 18 for Mr. John Greene and one for Mr. W. G. Willcox. The election was subsequently made unanimous. Mr. Arthur S. Somers was elected vice-president without opposing votes.

DR. A. O. THOMAS has taken office as state superintendent of education of Nebraska.

NEW YORK UNIVERSITY conferred on January 29 the degree of doctor of laws upon Dr. John Henry MacCracken, president-elect of Lafayette College, and the degree of doctor of humane letters upon Dr. Henry Noble MacCracken, president-elect of Vassar College.

DR. JAMES R. ANGELL, professor of psychology in the University of Chicago and dean

of the College of Arts and Sciences, has been appointed non-resident lecturer in psychology at Columbia University for the current academic year.

GOVERNOR BRUMBAUGH, of Pennsylvania, has accepted membership on the board of trustees of Fisk University, Nashville, Tenn.

THE Cornell Society of Civil Engineers held on January 22 in New York City its tenth annual dinner and reunion. The chief guest was Professor Charles D. Marx, of Leland Stanford Junior University, who has recently been elected president of the American Society of Civil Engineers.

AT the Founder's Day celebration of Clark University on February 1 the speaker was Dr. R. S. Lillie, professor of biology in the university. His subject was "The Relation of Universities to Investigation."

HARVARD UNIVERSITY has invited two professors from Louvain University to lecture during the second half year. Professor Charles Jean de Vallée Poussin will lecture on mathematics and Professor Léon Dupriez, who is professor of constitutional and Roman law, will give the Godkin lectures on "The Introduction and Working of Proportional Representation in Belgium." He will also give two courses of instruction, one on the comparison of the political institutions in Europe, and the other on Roman law.

DR. EUG. OBERHUMMER, professor of geography in the University of Vienna, who had expected to lecture at Columbia University during the second half year in spite of the war, has been forced to abandon his plans. Professor John M. Burgess will also abandon the work at the Austrian universities as the American exchange professor.

DR. EWALD EISERHARDT, head of the department of German, University of Rochester, who has been in Germany since June, has returned to his work, word having been received of his release from military service.

PROFESSOR LEON ARNAL, who was appointed professor of architectural design in the college of Engineering, University of Minnesota, at the beginning of the current year, but who was called to the French colors at the beginning of the present war, is now serving as French interpreter with the British army.

MISS EMILIE WATTS MCVEA, dean of women at the University of Cincinnati, has obtained a six months' leave of absence, beginning on February 1. She will go to the University of North Carolina, to do research work in English. Miss Josephine Simrall, a graduate of Wellesley College, will conduct her English classes during her absence.

DR. WALTER L. HERVEY, of the New York City board of education, by a unanimous vote has been appointed to succeed himself for a term of six years as a member of the board of examiners. Dr. Hervey has held his present position for more than sixteen years. Three physicians of forty candidates who took the recent civil service examination for the position of director of public health education in New York City have been placed on the eligible list. The eligible candidates are: Dr. Ira S. Wile, Dr. Winthrop Talbot and Dr. Charles F. Bolduan. The salary of the position is $5,000.

COLONEL GEORGE W. GOETHALS, who has been appointed Stafford Little lecturer on public affairs at Princeton University for this year, delivered an illustrated lecture on the Panama Canal at Princeton on Wednesday evening, January 27, in Alexander Hall. The lecture will be published by the Princeton University Press in the Stafford Little lecture series, the former volumes in the series being by Grover Cleveland, Joseph H. Choate, Elihu Root and J. G. Schurman.

PROFESSOR FRANK W. TAUSSIG, of Harvard University, will deliver two lectures on "Some Relations between Psychology and Economics" at Brown University during February, as a part of the lectures arranged in connection with the celebration of the one hundred and fiftieth anniversary of the founding of the college.

PROFESSOR JEREMIAH JENKS, of New York University, was the first speaker in a course of lectures on business, given under the joint auspices of Case School of Applied Science

and Western Reserve University, his lecture being given on January 26. The subject of the lecture was "The Nature and Significance of Business Training."

UNDER the auspices of the Archeological Institute of America, Cleveland Society, Dr. Clarence Powers Bill, professor of Greek in Western Reserve University, gave an illustrated lecture on "Epidaurus; an Ancient Greek Center of Divine Healing," on January 25, in the Amasa Stone Memorial Chapel of Adelbert College. In 1912–13, Dr. Bill was professor and acting director of the American School of Classical Studies at Athens.

IN view of the war, Professor George M. Dutcher will give a special series of lectures on "Modern European History," at Wesleyan University during the second semester. He will take up briefly the several movements which led to the formation of the Triple Alliance and the Triple Entente and which finally culminated in the present struggle.

THROUGH the aid of the Phelps-Stokes Fund of New York, Atlanta University and Morehouse College will offer jointly a college course in business law and ethics. This course is intended to equip the student with a working knowledge of the law of ordinary business transactions and the ethics of business management. The lectures will be given by Mr. Philip Weltner of Atlanta, a graduate of the University of Georgia and of the Columbia University Law School.

TEACHERS COLLEGE, Columbia University, announces a course of lectures on "Rural Education and Life," to be given on Wednesdays at five o'clock, beginning February 10. The speakers will be: P. P. Claxton, United States commissioner of education; Professor Milo B. Hillegas, Teachers College; Professor Thomas Nixon Carver, Harvard University; Dean J. H. Hills, College of Agriculture, University of Vermont; President J. H. Finley, commissioner of education of New York; Professor B. M. Davis, director of extension, Miami University, and Miss Anna B. Taft, assistant in country church work, Presbyterian Board of Home Missions.

THERE has been established at Teachers College, Columbia University, in memory of Miss Grace H. Dodge, a fellowship of the annual value of $500, to be known as the "Grace H. Dodge Fellowship." This fellowship will be open only to women, and will be awarded by the faculties of Teachers College. The educational standard required of applicants for this fellowship is the same as for the other fellowships of the college.

AT a memorial meeting in honor of Professor Albert Smith Bickmore, New York City, at the American Museum of Natural History, Professor Henry Fairfield Osborn, president of the museum, presided, and addresses were made by Joseph H. Choate, Dr. John M. Clarke and Cleveland H. Dodge. Professor Bickmore, largely through whose efforts the American Museum of Natural History was founded, took many years an active part in the educational work of the city and state, especially by arranging courses of educational and popular lectures.

DR. CYRUS FOGG BRACKETT, professor emeritus of physics at Princeton University, died on January 29, aged eighty-two years. Professor Brackett retired from teaching in 1908, but had been at work in the laboratory of the university every day until within the last week.

PROFESSOR LEWIS LINDSAY DYCHE, professor of systematic zoology and taxidermy and curator of birds and mammals in the University of Kansas, died on January 20, at the age of fifty-eight years.

DR. DUDLEY PETER ALLEN, professor of principles of surgery in the medical department of Western Reserve University, Cleveland, for many years, and later emeritus professor, died on January 6, at the age of sixty-two years.

MR. RAY T. SPENCER, ex-superintendent of public schools in Buffalo, N. Y., died on January 12, at his home at Melrose Park, Pa., aged seventy-seven years. Mr. Spencer took a leading part in the establishment of the present public-school system of Buffalo.

RECOGNIZING the importance of the problems of vocational education in the small city, the

United States commissioner of education has called a conference of superintendents of public schools to be held in Cincinnati in connection with the annual convention of the Department of Superintendence of the National Education Association. The invitation is open to superintendents of public schools in cities having a population of 10,000 to 25,000, and to representatives of the educational press. The conference will be held in the rooms of the Cincinnati Business Men's Club, at 5.30 P.M. on Wednesday, February 24; dinner will be informal and will be served promptly at 6 o'clock; tickets, $1.50. Applications for a copy of program and a card of admission should be addressed, before February 15, to W. T. Bawden, U. S. Bureau of Education, Washington, D. C., who is in charge of the arrangements.

THERE has recently been received a notice from Professor Fehr, of Geneva, secretary of the International Commission on the Teaching of Mathematics, giving the decision of the central committee to abandon the meeting planned for August, 1915, and also to postpone the preparation of such committee reports as relate to the work of European countries.

A MEETING of representatives of all the colleges and universities of Massachusetts was held at Boston University, on January 6, to consider plans looking to cooperative organization for public service on a broader scale on the part of all the colleges and similar institutions of Massachusetts. It was suggested that such cooperation might make possible an advance in university extension, and might also aid in bringing about other desired ends, such as the formation of common plans for the training of teachers, and a more systematic provision for expert technical service by academic officers to the state and municipalities.

THE board of regents of the University of Michigan will ask the present legislature for an appropriation of $750,000 with which to make additions to the library building and to erect a model training school for teachers. This school, if provided, will be administered by the department of education in the interests of the professional training of teachers. School superintendents throughout the state have long been advocating the need of such a school. They have contended that the graduates of the university who take up the profession of teaching are at present seriously handicapped by their lack of technical training as teachers. The movement in favor of this school has been fostered by the state board of education and the normal schools, as well as by the administrative officers of the high schools throughout the state.

THE New York City board of estimate, at its meeting, on January 29, voted in favor of the proposal to be made to the legislature to reduce the board of education from forty-six to nine. There was little debate on the measure. Whether the nine members of the board, if the bill passes, shall be paid, is to be left to the board of estimate. At a meeting of the board of education of the city two days earlier the board went on record as opposed to reducing itself. The first vote was on the general proposition of a reduction to a smaller number, with the exact size unnamed. This was opposed by a vote of 16 to 22. On the specific question of reducing the size to nine members the vote was 8 to 30. The eight who were in favor of the board of nine members were Messrs. Flexner, Fosdick, Giddings, Greene, Pink, Sullivan, Willcox and Winthrop. The new members of the board were generally in favor of a reduction. Legislation to reduce the size of the board of education at this time and without making any other changes in the charter is also being opposed by the various teachers' associations. In addition to the organizations which have heretofore gone on record against the proposal, the Association of Evening High School Teachers last week voted unanimously to campaign against it, and on Saturday the opposition of the Association of Men Teachers and Principals was recorded. The chief reasons for opposition are the objection to any change at this time and to any reduction in the size of the board without changes being made in other sections of the charter, governing powers and duties. There is also opposition to any revision which would

place the board of education under the domination of the board of estimate.

ACCORDING to the *Journal* of the American Medical Association, from February 8 to 13 will be the annual "Health Week" in Baltimore and each evening there will be illustrated lectures. Motion pictures will be used to show the fight in New Orleans against rats carrying the bubonic plague, the manner in which the common housefly manages to prey on human victims and also tuberculosis films. There will be an exhibit pertaining to public health work of blind persons and insane patients, the Public Athletic League, fraudulent medical advertisements and one of the latest and most powerful types of the pulmotor. On February 8, Governor Goldsborough and Dr. Harvey W. Wiley are to deliver addresses; on Tuesday, addresses will be delivered by Dr. W. L. Rodman, president-elect of the American Medical Association, on "The Prevention of Cancer," and by Dr. J. C. Bloodgood on "Local Aspects of Cancer"; on Wednesday, an address will be given by Dr. Arthur J. Cramp, on "Fakes and Frauds in Medicine," followed by a general discussion; on Thursday, Dr. W. M. Burdick, of the Public Athletic League, will speak on "Therapeutics of Play and Medical Hygiene of Childhood"; on Friday, the address will be by Dr. W. C. Rucker, on "Menaces of Bubonic Plague and the Vaccine," illustrated by slides taken in New Orleans, and on Saturday addresses will be delivered by Drs. L. L. Lumsden, N. R. Gorter and John H. Fulton. Moving pictures will be shown at each session.

PRESIDENT JAMES A. BLAISDELL announces that the twenty months' campaign to raise a million dollar endowment fund for Pomona College has ended successfully. The campaign began the last of May, 1913. On May 23, the General Education Board of New York City voted to grant the college $150,000 towards the fund. Four days later the president announced to the student body that including this gift $415,000 of the million had been promised, including the gift of $100,000 for the Mabel Bridges Hall of Music. From this time on the progress of the campaign was constant, most of the gifts coming from immediate friends of the college. Sixty thousand dollars was pledged by the six hundred alumni of the college; the trustees gave between $300,000 and $400,000, and the citizens of Claremont, $100,000. A special fund of $25,000 was given to establish the Joseph H. Johnson lectureship.

AT a meeting of the trustees of Allegheny College, held on January 29, President Crawford announced a gift of $40,000 from Andrew Carnegie to erect a new building for the chemistry department to take the place of the one recently destroyed by fire.

IT was announced at the meeting of the board of trustees of Northwestern University, held at the Patten Gymnasium on January 26, that Mr. Patten has given the university $27,000 to be used for the purpose of endowing scholarships in the medical school of the university. It is Mr. Patten's intention that the money from this endowment be used to pay the annual tuition and all other school fees for eight different students during their full medical course. He provides that the recipients of the scholarship shall receive their preliminary education to entrance to the medical school in the college of liberal arts of Northwestern University. This is one of the many evidences of Mr. Patten's generosity toward Northwestern University, and his third gift toward medical education at Northwestern. Several years ago Mr. Patten gave $250,000 to be used in developing the research department, but particularly to be used in promoting the work in bacteriology. Last year he gave an additional $250,000 to be used for endowment of the medical school.

IN Columbia University the tuition fee in the college has been increased from $5 to $6 a "point"—namely, an hour a week for a half year—and the point system has been extended to other schools, except Barnard College and the School of Law. Where the tuition fee is increased by the new legislation,

the increase will only affect students who register in the university after July 1 next. All students now in residence will be permitted to continue their present courses of study on payment of the tuition fees heretofore prevailing. Special fees heretofore charged for matriculation, registration, gymnasium and laboratory privileges, changes of course, etc., are abolished and a single membership fee of $5 for a half-year, or a summer session is established.

THROUGH the generosity of a resident of California and in connection with the Panama-Pacific international exposition the National Education Association offers a prize of $1,000 for the best essay on "The Essential Place of Religion in Education, with an Outline of a Plan for Introducing Religious Teaching into the Public Schools." Religion is to be defined in a way not to run counter to the creeds of Protestant, Roman Catholic or Jew. Notice of intention to file an essay must be given the secretary of the association at Ann Arbor, Mich., by April 1, 1915. Essays will be limited to 10,000 words and must be in the possession of the secretary by June 1, 1915. Six typewritten copies must be furnished in order that the preliminary reading may be done independently.

QUOTATIONS

THE UNIVERSITY AND THE WORKS OF PEACE

IN one of the finest passages of his "History of the Peloponnesian War," Thucydides, that "master of stern and solemn pathos, the pathos of naked, awful facts expressed by a few vivid touches in words fitly chosen or coined," describing the final struggle in the harbor of Syracuse between the invading Athenian fleet and the Syracusan ships, relates that the land forces of the Athenians, drawn up on the shore and witnessing from that slight distance the varying fortunes of the battle which was to decide once for all their own fate, were overcome by a conflict of emotions no less violent than the physical combat raging before their eyes, and swayed to and fro in a torment of hope and fear.

To-day we at Columbia are separated, it is true, by thousands of miles from the actual scenes of an incredibly vast conflict—a conflict as much greater than that of some two hundred triremes in the narrow space of the Sicilian harbor as our distance from the combatants exceeds the interval between those battling ships and the agonized spectators on the shore. We are in our own land, and our safety is not threatened. Yet this struggle of to-day, in each of its many scenes, in Europe or Asia or Africa or the uttermost parts of the sea, seems to be before our very eyes. We learn of encounters in Poland or Kiao-Chau sooner, and with greater completeness and accuracy of detail, than the Greeks at Syracuse could have heard of operations at Catania, some thirty miles away. Our hearts are torn and our minds bewildered by the complexity of our sympathies and our hopes and fears for a result which we are, alas! so powerless to affect. Is the whole world soon to be at war, as the daily reports of accessions to the number of fighting nations appear to indicate? Have the bonds that seemed to be so surely drawing its parts together all broken, under the strain of reawakened national hatreds and insatiable commercial ambitions?

How gladly should we find some refuge, some sanctuary, retiring to which we might shut out the thunder of the captains, and the shouting, and contemplate in tranquillity the coming of a day of peace! Yet that may not be hoped for, nor would it avail us long if we could discover it. Only some means of working to counteract the forces that make for war can give us peace in our own souls, something whose influence may be extensible to the ends of the earth, and which may in one way or another reach and affect for good all kinds of men. We may congratulate ourselves that we have at hand a great organization to furnish such means.

One of the most recent of our innumerable foreign critics writes as follows:

I take it that the American universities, both those for men and those for women, are the greatest things in America to-day. This, curiously enough, is not the American idea. The ordinary

American citizen is proud of every single thing in his country except the universities. He is always apologetic about them. He compares this country with England and is convinced that America is superior in every respect except in the matter of universities. When he speaks of the English universities he shows a certain sense of reverence and makes mention of his own much in the spirit of Touchstone, who introduced Audrey as "a poor thing," but my own.

This sounds at first a little strange to many of us. We have rather imagined that we (certainly the college graduates among us) were in danger of developing an excess of "college patriotism," at times somewhat hysterical, mostly of course confined to the particular alma mater of our academic upbringing, but all the more intense for that. Yet Canon Hannay is perhaps partly right; however fiercely the flame of our enthusiasm may burn, we do not esteem our universities in the right way or for the right things. We have surrounded ourselves too exclusively with the memory of our pleasant days of studentship, the athletic achievements of members of our own institution, her splendid buildings and lovely grounds and throngs of students; we have overlooked the fact that these things are not the most important characteristics of the wonderfully many-sided American universities. The real glory of our universities springs from other roots, that sink far deeper into our national life and will inevitably penetrate it yet more profoundly as the years go by. The quiet investigator in his laboratory or his library, perhaps unseen and unknown except by a very few out of the vast body of students, the justly popular lecturer whose hearers are numbered by hundreds, the engineer and the chemist under whose guidance and example is turned out a finished product of well-equipped technicians—all these men are not only indispensable to the university but form its truest glory. They alone enable the university to accomplish its distinctive work—a work that can not be done, or done so effectively and continuously, by any other organized agency. The university is but one of many engines designed to achieve the civilization of the world; and the greatness of any one is properly measured only by the extent and depth of its influence on civilization. The complicated structure of our universities, which so astonishes foreign observers accustomed to the clear-cut divisions of their own educational organization, and which has often seemed to ourselves a weakness, is gradually revealing itself as a source of strength. It enables the universities to touch the national life at so many points that inseparable connections are steadily forming, and the services thus done to the nation become tap-roots to bring back new sustenance to the universities. The endless chain of cause and result grows ever longer and stronger. The narrowness and aloofness of the university of older type, valuable as they were in producing a few prodigies of scholarship, are no longer possible or even desirable in a community like ours.

The term "university," at first denoting the whole body of teachers and students of a given "studium generale," has long since taken on a new meaning, and with every year the university itself is more abundantly justifying its designation in the new sense. Its universality of appeal is coming to be more and more an accepted fact. We at Columbia are happily part and parcel of a university in the widest and deepest sense of the word: of a vast and spreading community of investigators, teachers, learners, workers. But that university is not only, nor even chiefly, here, where we see its noble buildings and watch its thousands of students at work and play. It is constituted only in the smallest degree by being the local seat of athletics, of the polymorphous "student-life," proper and useful as these are. These things are only the beginning of our real university; it follows its sons and daughters out into the world of action, and every one of them is, consciously or unconsciously, a part of it. A new foundation is established in Washington, on an imposing scale, for scientific investigation in all fields of research; an ancient Asiatic people, the oldest of continuous existence in the world, is reborn, with many birth-pangs, into the community of modern

nations; and Columbia professors are summoned, to head the one, and to be chief adviser to the other. Another Columbia professor is called to interpret difficult questions of international law and policy at Washington; others to guide the destinies of institutions like our own; another to supervise the administration of relief to a community overwhelmed by a catastrophe of nature; others to direct the labors of commissions working devotedly and against innumerable discouragements to promote the cause of international conciliation; others to set forth the results of their researches to students of foreign universities; and so on. Wherever each one of these men is busy, our university is also. She is present where the engineers, the miners, the chemists whom she has taught are active, where her graduates in law and medicine are trying cases and healing the sick and fighting to banish disease and crime, and where thousands of her pupils become in their turn the teachers of others.

These are the works of peace whose outbranchings are endless, and in whose exercise our university is tireless. In the pursuit of them, as members and parts of the university, we as individuals may hope to promote the peace of the world and so to find it in our own souls. It is our duty and privilege to help make our university one of the most potent instruments in the world to prevent a succession of catastrophes inconceivably greater than that which befell the brave and ambitious but utterly misguided Athenians in Sicily.—E. D. P. in the *Columbia University Quarterly*.

BOOKS AND LITERATURE

Principles and Methods in Commercial Education: A Text-book for Teachers, Students, and Business Men. By JOSEPH KAHN AND JOSEPH J. KLEIN. New York, The Macmillan Company. 1914. Pp. xiv + 439.

This pioneer text presents a comprehensive study in a field of interest which has been barely scratched up to the present time. Pt. I., Principles of Commercial Education, treats (1) the essentials and value of a business education; (2) the course of study of the secondary commercial school; (3) general principles of method. Pt. II. considers the special method of the various subjects of commercial study: business arithmetic; office practise and routine; bookkeeping; accounting; commercial geography; technique of commerce; history of commerce; commercial law; economics; business English; and stenography and typewriting. Pt. III. discusses two special problems: the preparation and equipment of the commercial teacher; and the relation of the secondary school to the high school of commerce and to the business community. In the introductory chapter, the authors are apparently unwilling or unable to take a definite stand upon the question of formal discipline, for specific instances might be quoted which seem to show convictions on each side of the controversy. In the later chapters, the position of the authors is not so uncertain.

For many years the high-school commercial course has served as a haven of refuge for pupils who found it uncomfortable or impossible to carry the work of the regular traditional courses. No such charge can be supported against the course of study outlined in this text (p. 53). It has been organized with an entirely different purpose in mind, and contains subjects of broad, fundamental social interest, although at the same time it is manifestly intended to give specific vocational training. One is relieved to find a course which is not organized on a four or five hour per week basis for each subject. It is happily free from the college entrance domination of credits and half-credits, which has hampered so much of our high-school work during these later years. Two general lines of interest are provided for: (1) a commerce-bookkeeping course; and (2) a stenographic course, the former having in mind more especially the needs of the office administrator, and the latter those of the individual who is preparing to take up the clerical side of the business. There are enough common factors, however, so that the individual's ultimate career is not absolutely determined by this early choice. In its general outline, the scheme of work here presented shows the influence of the commer-

cial courses of the better European schools. The course of study is frankly outlined for the city commercial high school, although there is much suggestive material for the high school in which the commercial work constitutes merely one of several parallel lines of work.

Detailed treatment of the various subjects of instruction forms a particularly valuable feature of the book. Especially worthy of note are the syllabi on Local Industries in New York City, Municipal Activities, and Economics, for which the authors acknowledge their indebtedness to Dr. Tildsley of the New York High School of Commerce. The syllabus in economics is of general application, while the syllabi on local industries and municipal activities may well serve as models for the formulation of others with different local application.

One finds so much to commend that one is somewhat shocked at the reactionary attitude expressed by the following (p. 410): "In passing, however, it may be said that the person who has had the benefits of a liberal education, and who understands methodology, can, in an emergency, handle with reasonable success almost any subject the principles of which have been definitely formulated in a text-book." This certainly would seem to bear out the criticism that continental peoples direct against American schools, that "anybody at all can teach anything at all."

Each chapter in the book is summarized at its close, and is followed by bibliographies and lists of suggested questions in each instance. There is an adequate index. This text ought to be in the hands of every administrative officer responsible for formulating a commercial course of study, and of every teacher of commercial subjects.

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THE TEACHING OF MATHEMATICS IN THE CONTINUATION SCHOOLS OF GERMANY

This paper is based upon observations made in visiting continuation schools in Hamburg, Berlin, Halle, Munich, Karlsruhe, Heidelberg, Mannheim and Frankfort-on-the-Main. Details of organization and courses of study have been taken from the official reports of the continuation schools, and from the two numbers of the German Report to the International Commission on the Teaching of Mathematics which deal with the continuation schools.

COMMERCIAL CONTINUATION SCHOOLS

Organization.—These commercial continuation schools are supported, in the main, by the state, city or community. Some are supported by commercial corporations and associations. Attendance is usually, though not always, required of merchants' apprentices during the three years of apprenticeship.

In order to enter a commercial continuation school a student must have completed the Volksschule, or be past compulsory school age. In some schools entrance examinations are given in German and arithmetic. Candidates not passing these examinations must go into a preparatory class.

The length of the course is three years. In most parts of Germany the average number of hours of instruction a week is six. In the most of the commercial continuation schools of Baden and Wurttemberg eight or nine hours of instruction a week are given, and in Saxony the average is about twelve hours a week.

Aim of the Instruction.—These are vocational schools, and their aim is to give practical instruction to young persons entering commercial life.

The aims of the instruction in arithmetic, which is usually the only branch of mathematics taught in the commercial continuation schools, are two. First and foremost the pupils must be drilled in rapid and accurate computation; and by the solution and discussion of problems they must be given a better understanding of certain phases of commercial life. To attain this second end, the courses of study are so planned as to contain in the main only such topics as have applications in the life work of the apprentices. A school will, as a

rule, give special attention to the important industries of the locality.

When the size of the classes makes it possible, sections are organized for the different branches of trade. In Munich, for example, there are the following groups: banking, transportation, insurance, the book trade; groceries, farm products, food stuffs; textiles and other kinds of manufactured wares; iron and metal products, glass, porcelain and others.

Course of Study in Mathematics.—The following work is prescribed for the Prussian commercial continuation schools.[1]

Preparatory Course.—Systematic review of the fundamental operations with particular reference to the multiplication table and short methods of computation, and with special drill in the use of the German units of money, weights and other measures in problems from commercial life.

Lower Division.—Applications of the fundamental operations; simple computations of prices, with particular reference to local conditions; the most important units of money, weights and other measures in the commerce of the world; computations arising from transactions with the post office and the railroads. Chain rule.

Middle Division.—Percentage, interest, discount and equations of payments. Introduction to invoicing.

Upper Division.—Accounts current. Exchange. Stocks. Continuation of invoicing.

Besides this graded material, examples are to be given occasionally from the administration of the state and the municipality, and from taxation and insurance.

Nature and Methods of Instruction.—The methods of teaching in the continuation schools are similar to those of the Volksschulen, as many of the teachers in the continuation schools are, or have been, teachers in the Volksschulen.

The most of the time in the arithmetic classes is given to the solution of problems. The method of instruction is by question and answer. After a method of solution has been worked out, practise is given in applying it. The solutions of the problems are usually written by the students in permanent notebooks. As a rule one student works at the blackboard, and his results are used as a check by the other students.

There is much oral work in the classes, but not much rapid oral drill, such as may be seen in the Volksschulen. As a rule the students work with only a fair degree of speed, but with a good degree of accuracy. In some schools, however, more attention is given to speed. The official regulations of Prussia recommend that about ten minutes a day be given to mental arithmetic, and emphasize the importance of rapid calculation, mastery of short methods to be used in practise, and neatness of written work.

There was a wider range of excellence in the teaching in the continuation schools than in the elementary and secondary schools visited. The best teaching was seen in those schools where the teachers gave their whole time to the continuation schools. The poorest teaching was in the evening schools by teachers who were teaching only part time.

In northern Germany a considerable part of the work of the continuation school is done in the evening. There is much less of this evening work in southern Germany. It takes but little observation to show the advantage of the day over the evening school. After a day's work the students are tired, and in many cases, apparently, in no condition to do mental work.

It is impossible for one unacquainted with the details of a commercial system to tell how far certain phases of commercial instruction are valuable from the point of view of practise. The instruction in arithmetic in the German commercial continuation schools appears, in the main, to deal directly with practical problems. Of the classes in arithmetic observed in commercial continuation schools, nearly one half were doing work in stocks and bonds or exchange. The observations made are, of course, too few to base a judgment upon. But one wonders if so large a fraction of the time is usually given to these subjects, and if so, whether their importance justifies it.

[1] "Verwaltungsbericht des königlich preuszischen Landesgewerbeamts," 1912, p. 146.

Preparation of Teachers.—The problem of supplying the vocational schools with teachers who are specially prepared both as to teaching skill and as to knowledge of the industries, has not yet been solved in most parts of Germany.

In[2] scarcely any other kind of school does the teaching force have such a variety of preparation as in the commercial schools, philologists, teachers of German, mathematicians, also lawyers, political economists, teachers of special subjects, all grades of teachers from the Volksschulen, merchants, etc., partly as regular teachers (im Hauptamt), partly as special teachers (im Nebenamt).

The training of teachers for vocational schools is best organized in southern Germany.

Candidates for positions as commercial teachers in Baden must pass an examination the conditions for admission to which are as follows:[3]

1. Citizenship of the state of Baden.

2. Admission to candidacy as teacher in the elementary schools, or the completion of the seventh year of a secondary school.

3. Elementary school teachers must have had one year of practical experience in a mercantile establishment, and candidates who have finished the seventh year of a secondary school must have had two years of such experience, and this experience must precede the school attendance prescribed in 4.

4. At least two years' attendance upon an institution designated by the Minister of the Interior for the preparation of commercial teachers.

The examination in commercial arithmetic includes the following: The whole of commercial arithmetic. Equations of the first and second degree with one or more unknowns. Arithmetical and geometrical series. Compound interest and annuities. Theory of combinations. Binomial theorem. Loans and insurance.

[2] "Rechnen und Mathematik im Unterricht der kaufmännischen Lehranstalten," by Dr. B. Penndorf, p. 69.

[3] "Verordnungsblatt des grossherzoglichen Oberschulrats" (Karlsruhe, 1907), p. 143.

The kingdoms of Bavaria and Wurttemberg also provide by law for the training and certification of the teachers in the commercial schools.

Text-books.—There is no lack of arithmetics written for use in the commercial continuation schools. Many of them are written by instructors in these schools. These books are generally said to be satisfactory and to contain practical problems. So far as the writer observed, most of the problems solved in the classroom were taken from books. It is said[4] that in the texts written by teachers in the commercial schools the idea of developing arithmetic as a science has been completely abandoned, and that the attention is given simply to the choice of problem material that has immediate application in commercial practise.

INDUSTRIAL CONTINUATION SCHOOLS

Organization.—What has been said concerning the commercial continuation schools as to maintenance and conditions governing attendance applies here.

The length of the course is usually three, occasionally four, years. In Prussia the number of hours of instruction a week is usually six. In southern Germany the number of hours is often more, being nine in many schools in Munich, for example.

Aim of the Instruction.—The aim of these schools is to give practical instruction to young persons entering industrial life. Many schools have well equipped shops, and supplement the theoretical instruction with shop work under the direction of skilled mechanics. As far as possible the instruction is adapted to the particular calling of the student. Where the number of students permits, as in large cities, the classes are divided according to vocations, and the subject-matter in arithmetic, as in other studies, is chosen to meet the needs of the particular trades, as that of carpenter, tinner, shoemaker, and so on.

Arithmetic is one of the most important subjects in the continuation school. In many schools courses in algebra and geometry, and in some, courses in trigonometry and elemen-

[4] Penndorf, as above, p. 34.

tary mechanics also, are open to apprentices. Mathematics is taught because it is necessary in practise. It is to be regarded as a tool. The courses are organized, and the methods of instruction planned from that point of view. The discussions of problems in mathematics are expected to contribute to the pupil's understanding of the problems of his trade, and of the problems of his daily life outside his trade, for instance those arising from his relations with the municipality and the state.

Course of Study in Mathematics.—The following is taken from the course of study for machine builders in Munich.[5]

Arithmetic.—The problem of the teaching of arithmetic consists, on the one hand, in directing the student towards habits of living that are consistent with the income of his calling, on the other, training him in the solution of such problems of his trade as are adapted to his comprehension and which are important for the laborer. To attain the latter end, there will first be taught mensuration and the problems in the determination of weights connected with it, and also the use of tables of cross sections, weights and frequently appearing numerical constants; then there will be taken up examples of a technical kind which are necessary for understanding and carrying on the work in the shops.

First Class.—(*a*) Business arithmetic: Earnings of apprentices and other laborers; problems concerning the necessaries of life; savings institutions and their interest. (*b*) Mensuration: Quadrilateral, triangle, Pythagorean theorem, circle and its parts, ellipse. (*c*) Technical arithmetic so far as available time allows. Examples with reference to physics and the nature of materials.

Second Class.—(*a*) Business arithmetic: Special contract, other contracts, comparison of the contract wages with the wage per hour and the time of labor, as well as with other conditions. (*b*) Mensuration: Prism, cylinder, pyramid and cone. (*c*) Technical arithmetic: The most important forms of motion appearing in the technical work, applications to wheels, belts, tools; cog wheels, relation between the pitch circle, pitch, and number of teeth.

Third Class.—(*a*) Business arithmetic: Undertaking a common contract and the division of the work by the foreman; examples from taxes and insurance. (*b*) Mensuration: Pyramids and frustum of a cone; sphere; formulas of approximation for parts of the sphere. (*c*) Technical arithmetic: Applications to combinations of cog wheels in machines.

Fourth Class.—(*a*) Mensuration: Calculation of surfaces by approximate transformations into simpler forms; simple cases in the determination of centers of gravity; calculation of solids of revolution. (*b*) Technical arithmetic: Work done and the efficiency of power machines; the work of machine-tools.

In certain schools I saw outlines of courses in arithmetic and algebra that had been worked out by individual instructors to meet the needs of their classes. These outlines followed the official courses, but showed that in some schools fairly successful attempts were being made to organize material to suit local conditions.

Nature and Methods of Instruction.—What has been said of the general methods of instruction in the Commercial Continuation Schools applies here.

One important question to be asked concerning the instruction is, to what extent is it really vocational where it pretends to be? That is, do the problems and other parts of the subject-matter present such situations as the students will be likely to meet in industrial life?

It is not necessary to insist that some time must be taken in these classes as elsewhere for the development of principles and processes, and for drill. Such instruction is similar to that given in other schools. But in the instruction observed, the greater part of the time was given to the discussion of problems. These problems were taken in part from books prepared for the continuation schools, and in part furnished by the teacher from other

[5] "Die mathematischen Fächer an den niederen gewerblichen Lehranstalten in Deutschland," by Dipl.-Ing. W. Trost, p. 43.

sources. Some of the best problems were taken directly from the work in the shops, or from the work of the students outside the school. The following are examples.

In a class for shoemakers a piece of leather was hung on the wall and the boys were told the cost and use of different parts, were given suggestions about buying and selling, and then solved problems involving these facts.

In a class for gold- and silversmiths the problem of making a lamp that was being made by one of the boys was discussed. An estimate was made of the cost of material, labor and other items. The gain was then added, and the selling price of the lamp was placed at 145 marks. The maker said the selling price was to be 150 marks.

In a class for tinsmiths the boys were computing the cost of a cylindrical vessel with a conical top. Finding the amount of material gave opportunity for a review of the rules for the lateral surfaces of cones and cylinders. The cost was computed closely, including the cost of material, labor and shop expenses, to which was added the profit.

In a class for cooks and waiters the cost per plate of a five-course dinner was computed. Here again the price was calculated in detail, including cost of material, preparation, service and the profit.

Besides these, carpenters, stone masons, machine builders, locksmiths, bookmakers and others were observed, each working with such data and problems as would be met in practise.

In certain classes observed the use of tables was being taught, such tables as those giving the areas of circles with given radii, squares of numbers and trigonometric functions.

As no outside work was required of the students, the principles and processes taught had to be fixed by much repetition. Hence the amount of new material taken up in a class period was usually small.

Practically all of the problems worked in class were written in permanent note-books. I saw many of these note-books. They were usually excellently prepared, neat, and with the solutions in good form.

As has been said, courses are sometimes offered in algebra, geometry, trigonometry and mechanics. In these courses little attention is paid to theory. The principal thing is to make the facts clear by illustration, and then to fix them by using them in the solution of problems.

Use of Books.—Books were frequently used as sources of problems, but in some cases the problems were selected from various other sources better to meet the needs of particular classes. In some schools books were in the hands of the students.

Different opinions were expressed as to the value of the text-books, or rather *Aufgabensammlungen*, as sources of problems. Some of the teachers thought that these books furnish problems that are practical and usable, and others said that no satisfactory books of problems existed.

Preparation of Teachers.—In the last few years Prussia has taken up more carefully the preparation of teachers for the industrial continuation schools. In 1913 there was opened in Charlottenburg a school for the training of teachers for the industrial schools. Short courses for teachers, and for mechanics who wish to prepare to teach, are given in different parts of the kingdom. These courses usually continue for two weeks and the most of the time is given to the discussion of methods of instruction.

In 1910 in the industrial continuation schools of Prussia,[6] of 499 regular teachers, 362 were professional teachers and 137 had been practising a trade; and of 14,823 special teachers, 12,337 were professional teachers and 2,486 were practising a trade.

In southern Germany more attention has been given to the preparation of teachers for the industrial schools. We will take as an example Baden.

In Baden[7] a position as teacher in an industrial school can be obtained only after passing a preliminary and a principal examination. In order to be admitted to the pre-

[6] "Verwaltungsbericht des königlich preuszischen Landesgewerbeamts," 1912, p. 81.

[7] "Verordnungsblatt des grossherzoglichen Oberschulrats" (Karlsruhe, 1907), p. 147.

liminary examination the candidate must present proof of being a citizen of Baden; of acceptance as a candidate for a position as teacher in the Volksschulen, or of having completed the seventh year of a secondary school; and third, of having attended the first three classes (one and one half years) in the division for industrial teachers in the Baugewerkeschule in Karlsruhe. To be admitted to the principal examination, he must have had one year, in some cases two years, of practise in a trade, and have completed the course for industrial teachers in the above-named school. The mathematics in this course includes:[8] algebra through quadratic equations, arithmetical and geometrical series, logarithms, compound interest and annuities, combinations, the binomial theorem and elements of maxima and minima; plane, solid, descriptive and practical geometry; trigonometry, including the solution of the general triangle and applications; elements of analytical geometry; geometrical drawing; and mechanics. In the last two years one hour a week is given to the practise of teaching in industrial schools.

Some graduates of the middle technical schools become teachers. There is in Stuttgart a one-year course to prepare such persons for teaching. Another source of supply of teachers for the industrial schools is the technical Hochschule.

E. H. TAYLOR

EASTERN ILLINOIS STATE NORMAL SCHOOL

THE PROBLEMS OF HARVARD COLLEGE[1]

As usual the report upon the condition of the university begins with Harvard College, the kernel upon and about which the other schools are grouped; and the report for the college begins properly with the freshman class, since that year more than any other determines the tone of college life. For a number of years the size of the entering class has remained substantially the same, a fact which does not appear clearly from the figures in the annual catalogue, because the basis of class rating has been changed. Until a couple of years ago all undergraduates who had not removed their conditions at entrance were rated as freshmen, under the impression that a dislike of appearing in the catalogue in that guise would provide a strong stimulus to making up conditions early. But students care little about the rating in the catalogue, and, short of sending a man away, probation has proved to be the only effective form of penalty for neglect of work. In view of a marked rise in the standard of work required in college, any immediate increase in the number of students entering could hardly be expected. It is enough that there has been no falling off. Experience, however, appears to show that a demand for more work does not permanently reduce, but in time tends to enlarge, the attendance, and it is gratifying to report a growth in the size of the class entering in September, 1914. The number of new freshmen is 664, being 83 larger than last year. The increase is in part due to the fact that the percentage of rejections, which was excessive last year, has been reduced to the normal for the last few years. Perhaps the growth in size is due in part also to the opening of the new freshman halls.

The report of the chairman of the committee on admission contains much that is interesting, and among other things a statement of the average age of candidates. It appears that those who were admitted averaged about eighteen and a half years old, while the rejected were about nineteen. The difference ought not to surprise any one familiar with the problems raised by the age of students. Carefully compiled statistics referred to in the report of last year show that the men entering college young are on the average better, both in their studies and their conduct. On the whole they are the more intelligent and industrious youths, and this appears in the examination for entrance, as well as in college work. Yet even those who are admitted come too late. This subject was discussed in the last annual report, but it will bear repetition. With the long period of special training now required in every profession, there is a universal cry that men are beginning their careers in

[8] "Grossherzoglich badische Baugewerkeschule, Programm," 1909–10, pp. 30–36.

[1] From President Lowell's annual report.

life too old, and that the period of education is too long. Disease and death are not postponed because a man starts upon the practise of his profession a year or two later than is necessary. His period of active life, his achievements and his usefulness are simply curtailed to that extent; and a part, at least, of the time wasted could be saved in the school days before coming to college. Boys of ordinary capacity could, by beginning young enough, be ready to enter college a year earlier than most of them do now, and they would be perfectly competent to pursue the courses even of the best colleges. The advantages, indeed, would seem to be almost wholly in favor of entering college young. Seventeen is a more appropriate age than eighteen to begin the life of college. The real pleasures are more fully and innocently enjoyed. Under a proper environment the moral dangers are in fact less. The educational opportunities are quite within the reach of the youth who is well prepared for admission at that time; and, paradoxical as it may appear, he is in fact more likely to take advantage of them. He is at the period of life when his intellectual powers are growing rapidly, and when it is a natural process to develop those powers by exercising them without too much regard for the direct use to be made of the knowledge acquired. In short, there is a normal time for general education. A man who is too old, if a serious student, seeks to prepare directly for his career, to study his profession; or if not, is in danger of treating his studies lightly. Much has been said about maturity, but that is the result less of age than of environment and responsibility. Maturity may easily become over-ripe. Finally, the boy who enters college older begins life later, unless, indeed, he cuts down his time in college. If twenty-one is the best age to begin the study of a profession—and the signs of the times seem to point to this—then one must enter at seventeen or remain only three years. In the last analysis the practical problem for the community at the present day is narrowing itself down to shortening the college course or entering younger, to the question whether it is better to stay longer in school or have a fourth year in college. The question needs no answer for those who believe that the senior year is the most profitable not because it is the last, but because it is the fourth.

A hope was expressed last year that one of the objections of parents to sending their sons to college young, for fear of the sudden transition from school and home to college, would be in great part removed by the new freshman halls. Three of these halls, holding 489 students, have been completed and were filled at the opening of the academic year. As all freshmen not living at home or specially excused were required to reside there, the assignment of rooms involved much labor and discretion. Save that students coming in considerable numbers from any one school were required to distribute themselves among the three halls, and that the cheapest rooms were reserved for men of limited means, the freshmen were assigned rooms, so far as possible, in accordance with their preferences. Professor Yeomans, the assistant dean in charge of the freshmen, and Mr. Brandegee, the regent, succeeded in doing this in a way that is highly satisfactory. Owing to the increase in the entering class the halls can not contain all the freshmen, in spite of the large number of them who live at home. A score of men have been given rooms in other college dormitories with the privilege of taking their meals at, and being in other respects members of, one of the halls, while there are a few more wholly outside. It is probable, moreover, that a number of those who live at home would now be in the halls if there had been room for them. It is highly important, therefore, that the original plan should be completed as soon as possible by the construction of a fourth hall.

As yet it is too early to form a final opinion on the effect of these halls upon the student body; and in fact their complete influence can not be measured until a class entering them has passed through its whole college course; for their object is not merely to improve the freshman year, but to fit the men more rapidly to make a good use of their life in college. So far the halls appear to be producing the results for which they were designed. Many of the present freshmen were

prejudiced against them from a dread of loss of freedom and of school-boy regulations. This has disappeared; and the men as a body are well pleased, looking upon the halls as a privilege. There is, however, no benefit in life without some corresponding loss; and complaints are heard that while the freshmen mix freely in their several halls, they see little of the men in the other halls and nothing of upper classmen. This is true, but as a rule freshmen have in the past seen little of most of their classmates, and still less of the older classes, while those men in any class with whom they have been brought into contact have had antecedents similar to their own. A man has done well if in the first three months of college he makes the acquaintance of one hundred and fifty classmates of all kinds, almost all unknown to him before, and with experiences quite unlike his. There ought to be time enough in the rest of the year for men in the different halls to draw together, and later to come into close contact with upper classmen. We can rely on the freshmen not to neglect the abundant opportunities there will be to do so. By being more gradual the fusion ought ultimately to be more complete. In fact, it was mainly to prevent immediate segregation on the basis of similar origin that the halls were built.

On the whole, the freshmen seem to be taking college life distinctly more seriously at the outset, and the November grades show that they are certainly not less studious than before. The scholarship of many freshmen suffers from the sudden transition from the prescribed daily tasks of school to the larger freedom of college. Accustomed to constant supervision, they do not, when left to their own devices for regulating their hours of study, realize the need of self-discipline and systematic work, and are inclined to put off exertion until an examination is near. An experiment was therefore made last year of getting from the instructors reports in the early weeks of the term, and warning the delinquents. This proved very effective, as may be seen by the figures given in the report of the dean of Harvard College for the subsequent failures on the part of those men, as compared with others who had not been warned. Such a policy is in accord with the principle that the duty of the college consists not only in providing large opportunities for education, but also in making all students feel the importance of taking advantage of them. That can be done only in small part, and in the main only for the idle, by disciplinary measures. Far more can be accomplished by personal contact, and by an improvement of the general attitude toward college work. For this reason it is gratifying to refer again to the remarks of Dean Hurlbut on the effect of the rules about the choice of electives upon the seriousness with which the students regard the selection of their courses.

But faithfulness and ordinary proficiency in scholarship are not enough. During the last generation a tendency to disparage the high scholar has run through the educational system of America. It had been the fashion to say that the high scholar is passed in later life by the man of mediocre intellectual achievement in school or college—an idea as irrational as it is contrary to such evidence as can be derived from statistics. This is the only country where it is popularly believed that superior diligence and aptitude for knowledge are poor preparations for success in life. Keen competition in examinations may, or may not, have been carried too far in Europe; but we have certainly disregarded it too much here. No means ought to be neglected to encourage a desire and respect for excellence, and for this purpose the element of competition ought not to be left out of sight. Much may be done by drawing attention to the records of scholars and of schools. An example of this is the recent publication of the honor grades achieved at our entrance examinations by the boys from the different preparatory schools, which has attracted no little attention, and will help encourage the teacher to set his aim above merely getting candidates for admission through with a pass mark. To raise the respect for scholarship at school raises it in college, and *vice versa*. Conditions have in fact improved; and one hears far less of "C" as "the gentleman's mark," or of derogatory epithets for high scholars.

SOCIETIES AND MEETINGS

CONFERENCE ON INDUSTRIAL EDUCATION AND THE MANUAL ARTS

A conference of specialists engaged in the training of teachers for industrial education and the manual arts was held at the University of Chicago, November 19–21, 1914. From a report prepared by the Bureau of Education we learn that there were fourteen directors present, one from each institution, representing state universities, state normal schools and other institutions in the Mississippi Valley offering courses for the preparation of special teachers; as follows:

C. H. Bailey, State Teachers College, Cedar Falls, Iowa.

C. A. Bennett, Bradley Polytechnic Institute, Peoria, Ill.

G. F. Buxton, Stout Institute, Menomonie, Wis.

F. D. Crawshaw, University of Wisconsin, Madison, Wis.

I. S. Griffith, University of Missouri, Columbia, Missouri.

M. L. Laubach, State Normal School, Terre Haute, Ind.

F. M. Leavitt, University of Chicago, Chicago, Ill.

O. L. McMurry, Chicago Teachers College, Chicago, Ill.

A. C. Newell, State Normal University, Normal, Ill.

H. W. Schmidt, State Normal School, Oshkosh, Wis.

R. W. Selvidge, Peabody College, Nashville, Tenn.

C. S. Van Deusen, State Normal School, Kent, Ohio.

L. W. Wahlstrom, F. W. Parker School, Chicago, Ill.

F. C. Whitcomb, Miami University, Oxford, Ohio.

W. T. Bawden, U. S. Bureau of Education, Washington, D. C.

The resolutions adopted are said to be of significance: (1) Because they affirm the necessity for thorough preparation for teachers in this new work; (2) because of the emphasis upon the desirability of cooperation between the schools and industry; (3) because of the implied challenge to manual training supervisors and shop teachers to equip themselves adequately to contribute their share to the solution of industrial education problems; (4) because of the conviction expressed that any attempt at preparation for a given occupation must begin with an adequate study and analysis of that occupation; and (5) especially, because attention is called to the critical, and as yet unsolved, problem of vocational education for those individuals who are in occupations without a future.

Following is the text of the resolutions:

1. *Resolved,* that this conference favors the principle of state certification for admission as workers into the skilled trades and certain classified industries.

2. *Resolved,* that this conference favors the policy of having the state retain control of the education of the youth until he is established as a thoroughly competent worker in his vocation, and, to this end, it is believed that the state should cooperate in providing, so far as may be necessary, actual instruction within the industries.

3. *Resolved,* that the members of this conference believe that promising material for the vocational shop teacher is to be found in the professionally prepared manual training shop teacher who supplements his equipment by not less than one year's experience in the trade; and also in the skilled mechanic who supplements his trade equipment by not less than one year's special professional preparation.

4. *Resolved,* that this conference favors the policy of giving professional preparation for teaching to selected journeymen workers in industry, including such plans as the following: (1) Special institutes; (2) night school continuation classes; and (3) full-time residence course; with the provision that, so far as possible, such professional training should extend over a period equivalent to not less than one school year.

5. *Resolved,* that this conference favors the intensive analysis of many typical industrial occupations as a basis for the organization of courses of study for preparation for such occupations.

6. *Resolved,* that the members of this conference believe that it is essential that provision shall be made of opportunities for vocational education for individuals who are employed in the occupations for which they desire further special preparation, but also that opportunities should be provided that will encourage the progress of individuals into more desirable occupations.